UK MET OFFICE
GLOBAL DATA MONITORING REPORT

July 2026

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CONTENTS

1. Introduction

2. Global Data Monitoring Statistics

3. Composite Observing Systems for the North Atlantic (COSNA)

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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Exeter. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Exeter in time for inclusion into the appropriate analysis (the current cut-off time is approximately 7.2 hours after each analysis time). The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background) field, although to provide background values valid at the observation time for non-main hour data, time-interpolation of the T+3, T+6 and T+9 forecasts is used; and for sea surface temperature the background field is the analysis from the previous day. Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

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2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1and 2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or sea surface temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIFTER observations received per day throughout the month at Exeter and assimilated into model runs. All data are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At the UK Met. Office, we monitor SYNOP pressure after it has been interpolated to our Global NWP Model's surface height. For most synoptic stations (about 75%), the surface pressure (at the model surface) is calculated from the reported station-level pressure, or, if this is not available, the height of a standard pressure-level (e.g. 850 hPa or 700 hPa). If neither of these are available, or if the reported station-level pressure is deemed unreliable, the reported mean sea-level pressure is used (about 25% of SYNOPs).

Aircraft observations

Tables 4A (300-150 hPa) and 4B (1000-301 hPa) contain lists of statistics calculated from data received from all airline carriers.

Figures 3A (300-150 hPa) and 3B (1000-301 hPa) show 10 degree lat/long box average numbers of aircraft reports in AIREP/AMDAR code (including AIREP, ACAR, AMDAR, ASDAR and ADS) received per day throughout the month at Exeter and assimilated into model runs. Observations with a vector wind difference (compared with the model background field) of >60 m s^{-1} have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Figures 4A-7A (300-150 hPa) and 4B-7B (1000-301 hPa) show wind statistics for AIREP/ASDAR in AIREP/AMDAR code (including AIREP, ACAR, AMDAR, ASDAR and ADS). Observations with a vector wind difference > 60 m s^{-1} have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed (m s^{-1})
7	RMS observation-background vector (m s^{-1})

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Exeter and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-39 show sounding statistics from the polar orbitting satellite NOAA-15. Figure 25 shows the mean daily number of ATOVS soundings, and figures 26-39 show mean and standard deviation observation-background differences for brightness temperature, for selected channels.

Figure		Weighting function peak (hPa)
26	Mean	Surface (HIRS8)
27	SD	Surface (HIRS8)
28	Mean	700 (HIRS15)
29	SD	700 (HIRS15)
30	Mean	500-700 (HIRS11)
31	SD	500-700 (HIRS11)
32	Mean	400 (HIRS4)
33	SD	400 (HIRS4)
34	Mean	700 (AMSUA5)
35	SD	700 (AMSUA5)
36	Mean	300 (AMSUA7)
37	SD	300 (AMSUA7)
38	Mean	100 (AMSUA9)
39	RMS	100 (AMSUA9)

Figures 40-54 show sounding statistics from the polar orbitting satellite NOAA-16. Figure 40 shows the mean daily number of ATOVS soundings, and figures 41-54 show mean and standard deviation observation-background differences for brightness temperature, for selected channels.

Figure		Weighting function peak (hPa)
41	Mean	Surface (HIRS8)
42	SD	Surface (HIRS8)
43	Mean	700 (HIRS15)
44	SD	700 (HIRS15)
45	Mean	500-700 (HIRS11)
46	SD	500-700 (HIRS11)
47	Mean	400 (HIRS4)
48	SD	400 (HIRS4)
49	Mean	700 (AMSUA5)
50	SD	700 (AMSUA5)
51	Mean	300 (AMSUA7)
52	SD	300 (AMSUA7)
53	Mean	100 (AMSUA9)
54	RMS	100 (AMSUA9)

Figures 55-69 show sounding statistics from the polar orbitting satellite NOAA-18. Figure 55 shows the mean daily number of ATOVS soundings, and figures 56-69 show mean and standard deviation observation-background differences for brightness temperature for selected channels.

Figure		Weighting function peak (hPa)
56	Mean	Surface (HIRS8)
57	SD	Surface (HIRS8)
58	Mean	700 (HIRS15)
59	SD	700 (HIRS15)
60	Mean	500-700 (HIRS11)
61	SD	500-700 (HIRS11)
62	Mean	400 (HIRS4)
63	SD	400 (HIRS4)
64	Mean	700 (AMSUA5)
65	SD	700 (AMSUA5)
66	Mean	300 (AMSUA7)
67	SD	300 (AMSUA7)
68	Mean	100 (AMSUA9)
69	RMS	100 (AMSUA9)

N.B. All satellite sounding data is bias-corrected (and thinned) before being assimilated in the UKMO NWP model.

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Exeter during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Exeter in DRIFTER code during the month for the area 10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Exeter from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics **(Geopotential Height and Windspeed at 100 and 500 hPa)** for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

Revisions

1. May 95 Monitoring statistics for NOAA-11 removed. Figures 25-27 now show data for NOAA-12
2. May 95 Notes giving details of observations included in wind direction statistics clarified and corrected.
3. August 95 Monitoring statistics for NOAA-14 added with figures 28-30.
4. February 96 Monitoring statistics for GOES-7 have been replaced by statistics for GOES-8 and GOES-9.
5. April 96. 500 km and 120 km SATEMs replaced by 120 km resolution temperature profiles produced locally from the radiances disseminated by NESDIS.
6. February 97 Monitoring statistics for Meteosat 5 have been replaced by statistics for Meteosat 6.
7. Sept 97 Monitoring statistics for NOAA-12 removed. Figures 25-27 now show data for NOAA-11
8. January 1998. Increase in resolution of UKMO global forecast model.
9. April 1998. GOES winds ceased on 2nd March 1998, and were replaced with GOES high resolution winds from 15th.
10. June 1998. Monitoring statistics for Meteosat-6 were replaced by monitoring statistics for Meteosat-7, from 3rd June.
11. June 1998. Corrections in our processing of radiosonde data resulted in a decrease in the number of 500hPa geopotential heights in Figure 8 of about 230 per 24 hours (compared with previous reports), and a small increase in the number of 300hPa winds in Figure 9.
12. July 1998. Meteosat-5 began transmitting winds from 2nd July, at 63 degrees East (over the Indian ocean), and this data is included in the statistics.
13. July 1998. GOES-9 (at 135W) was replaced mid-month by GOES-10 (initially at 105W, moving towards 135W).
14. February 1999. Problems with NOAA-11, and TOVS data ceased to be assimilated from 26 February.
15. March 1999. UKMO introduced 3-D VAR assimilation system on 29 March, and also began assimilating ATOVS data from NOAA-15.
16. May 1999. Included statistics for ATOVS sounding data from NOAA-15.
17. September 1999. Included statistics for high resolution visible winds from Meteosat-5 and Meteosat-7.
18. October 1999. The 3-D VAR assimilation system was upgraded on 19 October, including improvements in the assimilation of ATOVS radiances, use of SSM/I surface wind speed, an improvement in the calculation of surface pressure for SYNOPs, and thinning and revision of observation errors of aircraft data.
19. November 1999. High resolution visible winds from Meteosat-5 and Meteosat-7 removed until used operationally.
20. April 2000. Aireps in Table 4 and Figures 3-7 split into ranges 300-150 hPa (A) and 1000-301 hPa (B).
21. September 2000. Corrected an error affecting the mean positions of a minority of buoys in Table 2.
22. November 2000. An error in the production of Table 6 was corrected. Previously, some sondes with suspect vector winds were being missed.
23. April 2001. Included statistics for ATOVS sounding data from NOAA-16.
24. May 2001. Included statistics for sea surface temperatures from marine surface observations.
25. December 2002. Included statistics for ATOVS sounding data from NOAA-17.
26. December 2002. Meteosat-7 and Meteosat-5 SATOB winds replaced by higher resolution BUFR-coded winds.
27. November 2003.Included temperature and relative humidity statistics for ships, fixed buoys and platforms in Table 1.
28. November 2003. NOAA 17 statistics no longer available due to malfunction of the AMSU-A instrument.
29. December 2005. Included statistics for ATOVS sounding data from NOAA-18.

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for ships, fixed buoys and platforms.

Standard of comparison :Background field from UKMO global model.

Observation times :All hours

Elements monitored
:Mean sea level pressure (hPa).
:Wind speed ($m\ s^{-1}$).
:Wind direction (Degrees).
:Air temperature (Degrees C).
:Relative Humidity (%).
:Sea surface temperature (Degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:PGE :Percentage of observations with gross errors.

:%REJ :Percentage of observations flagged excluding those with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. a positive bias indicates the wind observation is veered to the background.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT
:15 hPa (pressure)
:25 $m\ s^{-1}$ (vector wind)
:15 degrees (air temperature)
:10 degrees (sea surface temperature)

SELECTION CRITERIA :NOBS ≥ 20 , and one or more of the following:

1.|bias|	≥ 4 hPa	(pressure),
	≥ 5 $m\ s^{-1}$	(wind speed),
	≥ 30 degrees	(direction).
	≥ 3 degrees	(sea surface temperature).
	≥ 4 degrees	(air temperature)
	≥ 15%	(relative humidity)
2.SD	≥ 6 hPa	(pressure),
	≥ 80 degrees	(direction).
	≥ 5 degrees	(sea surface temperature).
	≥ 6 degrees	(air temperature)
	≥ 25%	(relative humidity)
3.PGE	≥ 25	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 $m\ s^{-1}$

IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
A8ER9	P	25	4	100	2.6	-6.0	6.6
A8FZ6	P	28	0	89	1.1	5.5	5.6
BATFR09	P	46	83	93	3.3	-0.4	3.3
C6FE5	P	67	0	9	1.4	5.0	5.2
C6FV3	P	23	0	35	0.9	4.8	4.9
C6LG6	P	27	0	70	1.6	-5.7	5.9
C6PZ3	P	22	0	9	1.5	7.7	7.8
C6QK	P	70	0	7	1.5	5.2	5.5
DGRF	P	35	0	6	1.6	4.4	4.7
DLCX	P	35	0	6	2.1	4.6	5.0
ELVF4	P	37	0	0	0.8	4.3	4.4
LAYG5	P	25	0	0	0.8	-4.0	4.1
MHNN5	P	26	4	58	6.3	8.2	10.3
OWTW2	P	25	0	0	1.6	5.1	5.4
SWJC	P	22	0	59	4.1	-5.4	6.8
S6JS	P	48	2	98	3.4	-8.8	9.4
TESTCA5	P	311	0	100	0.6	-10.9	10.9
UANF	P	22	0	100	0.5	5.2	5.2
UCUQ	P	30	7	100	2.1	11.3	11.5
UGNQ	P	55	0	5	1.8	-4.7	5.1
V2AW5	P	23	0	4	1.9	4.9	5.2
V2BN9	P	49	0	80	0.7	-5.8	5.9
V7FN7	P	21	5	43	4.8	-4.9	6.8
WCBP	P	58	0	52	3.3	-4.0	5.2
WDB9918	P	42	0	100	1.6	-4.9	5.1
WDB9986	P	51	2	6	1.7	7.2	7.4
WUW2120	P	38	47	87	4.4	-6.3	7.7
YJZJ5	P	33	0	64	1.1	4.1	4.3
42043	P	85	62	96	6.0	-11.4	12.9

IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
A8CG8	SPEED	20	0	20	5.2	6.1	8.0
ELVL8	SPEED	26	0	4	1.9	5.0	5.3
HP6038	SPEED	233	0	44	3.6	5.2	6.4
MCUV3	SPEED	28	0	100	2.8	5.4	6.1
OWFU2	SPEED	49	6	100	6.0	6.7	9.0
S6JT	SPEED	42	2	60	5.6	9.3	10.9
VEP717	SPEED	199	0	53	3.7	5.0	6.2
VTXK	SPEED	31	0	23	5.5	6.6	8.6
WBN2074	SPEED	25	0	100	3.8	5.4	6.6
23097	SPEED	211	0	0	2.4	-5.4	5.9
3EAT6	SPEED	34	0	0	3.3	-5.7	6.6

IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
A8IY4	DIRN.	29	0	0	87.8	-17.1	89.4
GQVS	DIRN.	21	14	0	63.7	44.7	77.8
H9UY	DIRN.	39	0	0	71.7	36.4	80.5
ZIZP9	DIRN.	31	0	0	46.5	-32.7	56.8
23168	DIRN.	39	0	0	13.2	-84.1	85.1
23174	DIRN.	168	0	0	116.1	-63.2	132.2
46078	DIRN.	47	0	0	8.9	-48.9	49.8
52007	DIRN.	185	0	0	57.6	-32.6	66.2
52086	DIRN.	126	0	0	106.3	19.2	108.0
61001	DIRN.	26	0	0	102.8	84.9	133.3
62023	DIRN.	251	0	0	13.1	86.6	87.5
9MCM4	DIRN.	46	0	0	40.7	-31.3	51.3

IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
BATFR09	T	46	76	100	7.6	-1.4	7.7
C6LG6	T	27	15	100	2.8	10.8	11.1

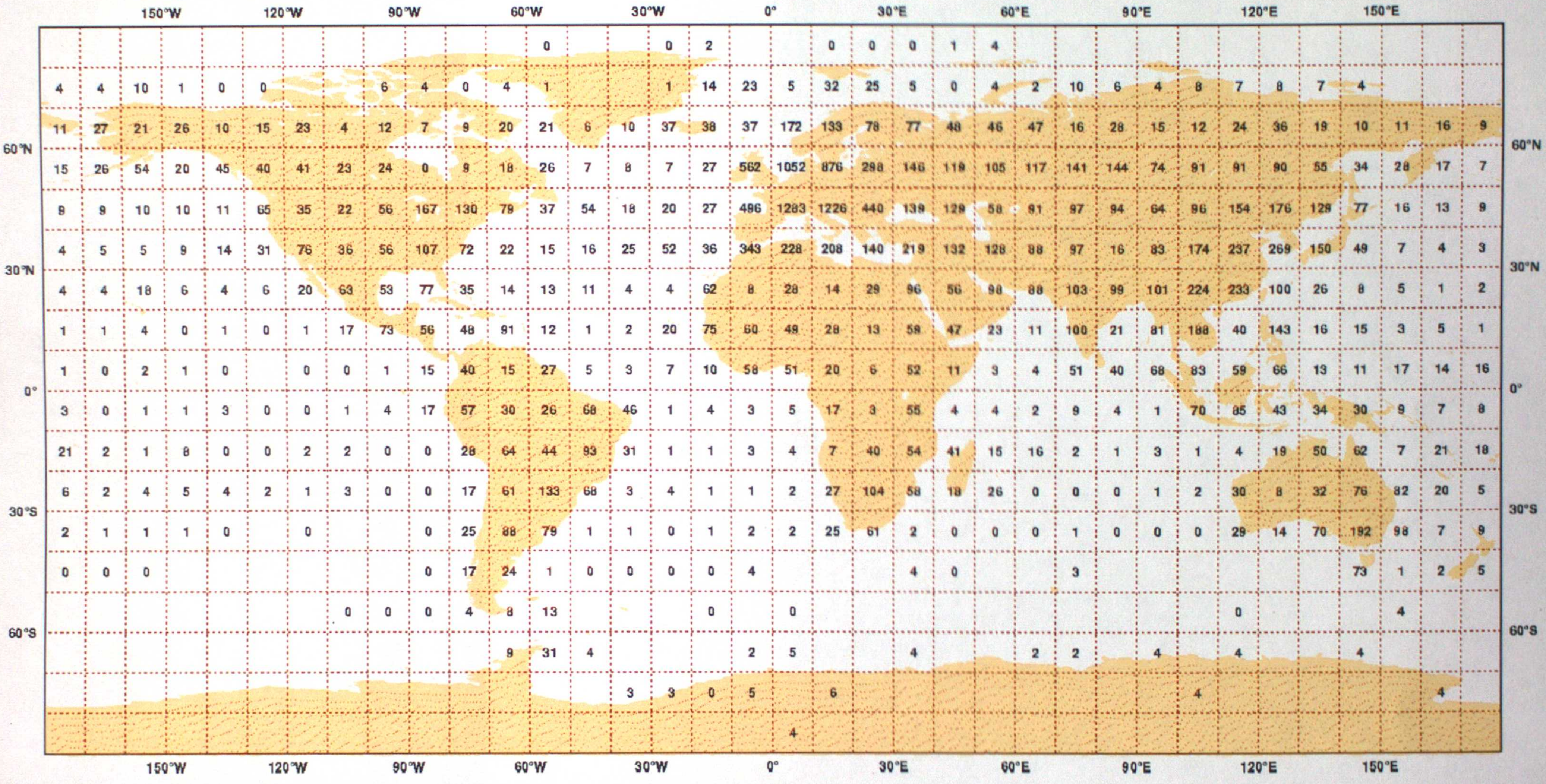
C6RN3	T	22	14	100	4.1	8.7	9.7
DBLK	T	245	1	100	4.1	-5.3	6.7
LAVX4	T	34	26	100	1.5	0.2	1.5
LMXQ	T	66	0	100	1.5	4.5	4.7
PCHM	T	25	4	100	5.1	7.1	8.8
PHEO	T	31	0	100	5.2	5.4	7.5
PHFV	T	26	0	100	5.1	5.5	7.5
PHSG	T	72	1	100	4.9	4.5	6.7
UCKH	T	89	15	100	4.4	6.7	8.0
UCTS	T	43	0	100	1.5	4.1	4.4
UEMM	T	47	2	100	3.2	5.3	6.2
UGGA	T	47	0	100	2.3	5.0	5.4
VCLX	T	40	5	100	2.9	5.0	5.8
V7FN7	T	21	29	100	3.3	2.0	3.9
WBN5978	T	59	0	100	4.5	4.4	6.3
WCY2306	T	144	8	100	2.1	10.8	11.0
WDB5265	T	72	14	100	3.4	4.5	5.7
WN4201	T	46	9	100	4.1	9.9	10.7
WXJ63	T	219	8	100	2.6	9.5	9.9
44255	T	99	0	100	1.8	5.3	5.6
45006	T	246	0	100	2.0	7.3	7.5
45141	T	324	64	100	0.6	14.1	14.1
45144	T	716	31	100	1.9	12.5	12.6
45158	T	168	4	100	2.6	9.0	9.3
46054	T	199	0	100	3.8	-4.7	6.0
46081	T	736	0	100	1.4	6.6	6.8
46088	T	492	8	100	4.4	-5.5	7.1
52080	T	31	0	100	2.9	-4.0	4.9

IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
BATFR01	RH	104	0	100	20.6	20.6	29.1
BATFR09	RH	25	0	100	40.0	-36.4	54.1
DBBX	RH	587	0	100	10.1	16.0	18.9
DBBXX	RH	80	0	100	10.3	15.3	18.4
DBFC	RH	462	0	100	24.6	-38.7	45.8
ELTY3	RH	25	0	100	9.1	15.3	17.8
FNAT	RH	58	0	100	4.0	18.6	19.0
OVYA2	RH	106	0	100	17.4	-15.6	23.4
PBGH	RH	20	0	100	4.8	-16.1	16.8
PDWT	RH	61	0	100	21.5	-17.7	27.9
SCKM	RH	31	0	100	13.5	-15.5	20.5
46088	RH	490	0	100	19.3	27.8	33.9
62133	RH	718	0	100	10.2	-15.7	18.7

IDENTIFIER	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
A8CF9	SST	25	8	64	2.4	-4.3	4.9
A8DZ4	SST	28	0	100	0.7	3.4	3.5
A8IN7	SST	20	0	60	1.6	-4.2	4.4
BATFR09	SST	43	100	107			
CGTF	SST	87	76	100	1.2	8.7	8.8
C6KD5	SST	30	0	97	1.2	-5.2	5.4
C6RM7	SST	32	0	69	1.4	-3.3	3.5
DCCM2	SST	38	0	100	0.9	-3.5	3.6
DGCT	SST	66	0	55	2.7	3.5	4.4
DGGV	SST	43	0	14	1.0	3.0	3.2
DHEB	SST	37	0	30	1.1	-3.3	3.5
DHSI	SST	46	0	100	1.8	-4.1	4.5
DIGW	SST	28	0	61	0.8	-3.9	4.0
HODP	SST	25	0	44	1.7	-3.8	4.2
J7AW6	SST	42	0	74	1.8	-3.8	4.3
KRHX	SST	60	0	55	2.4	-3.4	4.1
KS049	SST	222	6	100	2.4	-3.7	4.4
LMXQ	SST	65	95	95	0.0	0.0	0.1

MCUV3	SST	25	4	48	2.1	-3.1	3.8
MGYF6	SST	49	29	94	4.0	0.9	4.1
NL9H	SST	44	0	98	0.8	-4.1	4.1
P3BP9	SST	34	0	100	0.7	4.4	4.5
P3JA8	SST	47	0	100	0.7	3.2	3.3
P3ZY6	SST	31	0	68	1.6	4.6	4.9
SWJC	SST	34	100	103			
S6IW	SST	50	0	100	2.2	-4.5	5.0
S6TY	SST	20	0	105	1.0	3.1	3.3
UCFT	SST	61	0	100	1.4	-3.9	4.1
UINM	SST	24	0	38	2.0	3.2	3.8
VC6750	SST	24	100	400			
V2CC	SST	26	0	100	1.5	3.0	3.3
WAAH	SST	96	0	101	1.2	3.2	3.4
WBWK	SST	24	0	29	1.5	3.0	3.4
WDB9135	SST	40	0	32	1.0	-3.5	3.6
WSRH	SST	55	0	100	1.1	-4.1	4.2
WTDK	SST	52	0	35	1.6	3.1	3.5
WTEB	SST	62	10	39	3.7	3.2	4.9
WYP8657	SST	147	1	42	2.8	3.2	4.2
WZJD	SST	30	3	100	0.4	-4.2	4.2
3ERP5	SST	45	0	51	1.7	3.2	3.6
3FRR5	SST	51	29	100	4.5	-0.3	4.5
44018	SST	737	0	49	2.7	-3.2	4.2
45006	SST	247	2	100	1.0	7.2	7.3
45141	SST	327	100	100			
45144	SST	719	100	100			
45145	SST	562	100	100			
45158	SST	172	65	100	1.3	8.1	8.2
46025	SST	248	0	78	1.0	3.8	3.9
46223	SST	493	0	83	1.3	4.1	4.3
46225	SST	491	0	98	0.9	4.0	4.1
46231	SST	469	0	84	1.2	3.4	3.6
62125	SST	31	0	52	1.3	3.3	3.5
8POF	SST	53	0	38	0.9	3.6	3.7

Figure 1. SHIP/SYNOP mean daily count. JULY 2006
All hours
Global average number of observations in 24 hours = 21371



												0			0	2			0	0	0	1	4												
4	4	10	1	0	0			6	4	0	4	1			1	14	23	5	32	25	5	0	4	2	10	6	4	8	7	8	7	4			
11	27	21	26	10	15	23	4	12	7	9	20	21	6	10	37	38	37	172	133	78	77	48	46	47	16	28	15	12	24	36	19	10	11	16	9
15	26	54	20	45	40	41	23	24	0	9	18	26	7	8	7	27	562	1052	876	298	146	119	105	117	141	144	74	91	91	90	55	34	28	17	7
9	9	10	10	11	65	35	22	56	167	130	79	37	54	18	20	27	496	1283	1226	440	139	129	58	91	97	94	64	96	154	176	129	77	16	13	9
4	5	5	9	14	31	76	36	56	107	72	22	15	16	25	52	36	343	228	208	140	219	132	128	88	97	16	83	174	237	269	150	49	7	4	3
4	4	18	6	4	6	20	63	53	77	35	14	13	11	4	4	62	8	28	14	29	96	56	98	88	103	99	101	224	233	100	26	8	5	1	2
1	1	4	0	1	0	1	17	73	56	48	91	12	1	2	20	75	60	48	28	13	58	47	23	11	100	21	81	188	40	143	16	15	3	5	1
1	0	2	1	0		0	0	1	15	40	15	27	5	3	7	10	58	51	20	6	52	11	3	4	51	40	68	83	59	66	13	11	17	14	16
3	0	1	1	3	0	0	1	4	17	57	30	26	68	46	1	4	3	5	17	3	55	4	4	2	9	4	1	70	85	43	34	30	9	7	8
21	2	1	8	0	0	2	2	0	0	28	64	44	93	31	1	1	3	4	7	40	54	41	15	16	2	1	3	1	4	19	50	62	7	21	18
6	2	4	5	4	2	1	3	0	0	17	61	133	68	3	4	1	1	2	27	104	58	18	26	0	0	0	1	2	30	8	32	76	82	20	5
2	1	1	1	0		0			0	25	88	79	1	1	0	1	2	2	25	61	2	0	0	0	1	0	0	0	29	14	70	192	98	7	9
0	0	0							0	17	24	1	0	0	0	0	4				4	0			3							73	1	2	5
							0	0	0	4	8	13				0		0											0				4		
											9	31	4				2	5			4			2	2		4		4			4			
														3	3	0	5		6									4						4	
																		4																	

TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoys.

Standard of comparison :Background field from UKMO global model.

Position :Average latitude and longitude for period.

Observation times : All hours

Elements monitored
:Mean sea level pressure (hPa).
:Wind speed ($m\ s^{-1}$).
:Wind direction (degrees).
:Sea surface temperature (degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:PGE :Percentage of observations with gross errors.

:%REJ : Percentage of observations flagged excluding those with gross errors

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. a positive bias indicates the wind observation is veered to the background.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT
:15 hPa (pressure)
:25 $m\ s^{-1}$ (vector wind)
:10 degrees (sea surface temperature)

SELECTION CRITERIA : NOBS ≥ 20 , and one or more of the following:

1.|bias|	≥ 4 hPa	(pressure),
	≥ 5 $m\ s^{-1}$	(wind speed),
	≥ 30 degrees	(direction).
	≥ 3 degrees	(sea surface temperature).
2.SD	≥ 6 hPa	(pressure),
	≥ 80 degrees	(direction).
	≥ 5 degrees	(sea surface temperature).
3.PGE	≥ 25.	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 $m\ s^{-1}$

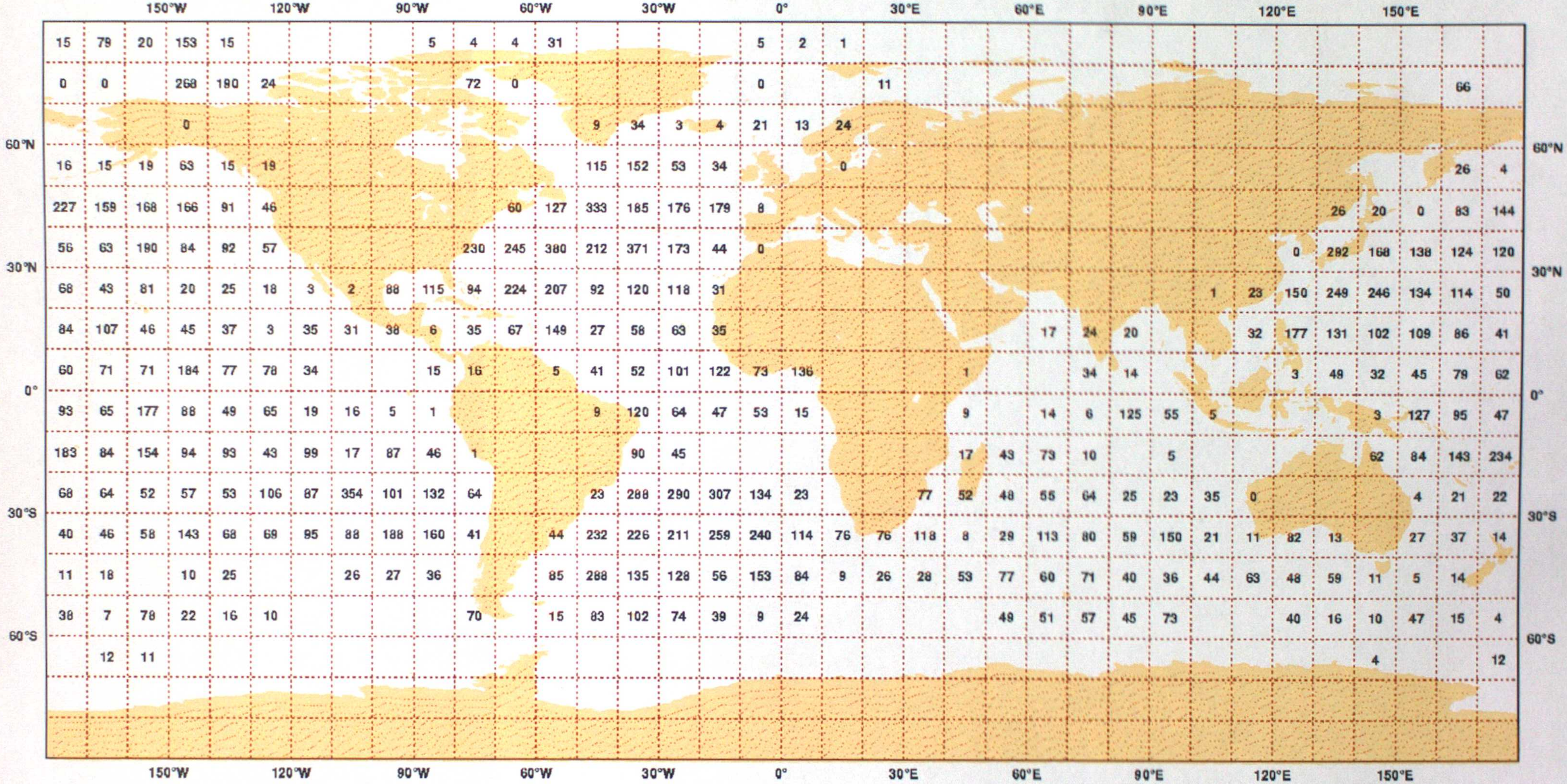
IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
17658	-57.2	57.8	P	876	46	87	7.8	-2.6	8.2
21960	42.6	-177.0	P	553	0	100	2.9	4.5	5.4
23594	-4.8	68.4	P	446	0	100	0.7	-5.1	5.2
25574	85.6	3.3	P	31	100	100			
33661	-56.8	-33.4	P	150	15	100	4.4	5.3	6.9
56532	-37.6	144.9	P	33	100	100			
68992	-54.4	3.3	P	1319	0	100	1.3	-5.1	5.2
71575	-56.6	19.9	P	285	44	76	5.3	-6.3	8.2
71578	-53.8	30.6	P	282	13	84	3.9	-6.6	7.7
71636	-59.0	12.8	P	750	49	100	7.3	-5.8	9.3
74541	-58.4	20.2	P	65	80	100	1.9	-11.0	11.1
74545	-67.8	26.7	P	515	31	100	6.1	-5.5	8.2

IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
26501	89.6	-10.0	SPEED	30	27	100	3.7	17.2	17.7

IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
13973	2.8	-12.5	DIRN.	171	0	0	21.0	36.2	41.8
13979	0.6	140.9	DIRN.	330	0	0	16.1	-33.3	36.9
15951	1.8	1.5	DIRN.	374	0	0	12.9	44.8	46.7
41643	38.1	-50.5	DIRN.	444	0	0	13.5	35.3	37.8

IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
13979	0.0	2.7	SST	60	0	100	1.5	-5.0	5.2
14919	-14.1	-39.0	SST	135	0	74	1.7	-4.0	4.3
22625	18.6	121.1	SST	49	0	100	1.6	-5.7	6.0
32521	-15.5	-157.0	SST	690	0	100	0.7	4.0	4.1
41685	35.4	-57.7	SST	933	0	100	0.5	-3.4	3.4
43517	20.5	-87.2	SST	181	47	71	3.6	1.2	3.8
44842	71.0	26.0	SST	329	1	76	1.9	3.9	4.3
51961	20.9	-156.7	SST	60	7	100	3.6	-3.0	4.7
61689	32.7	12.2	SST	35	6	69	3.7	3.0	4.8
64615	63.8	-38.6	SST	265	22	100	1.9	7.3	7.6

Figure 2. DRIFTER mean daily count. JULY 2006
All hours
Global average number of observations in 24 hours = 23920



15	79	20	153	15					5	4	4	31					5	2	1																
0	0		268	180	24					72	0						0			11														66	
			0										9	34	3	4	21	13	24																
16	15	19	63	15	19								115	152	53	34			0															26	4
227	159	168	166	91	46						60	127	333	185	176	179	8														26	20	0	83	144
56	63	190	84	92	57					230	245	380	212	371	173	44	0													0	282	168	138	124	120
68	43	81	20	25	18	3	2	88	115	94	224	207	92	120	118	31												1	23	150	249	246	134	114	50
84	107	46	45	37	3	35	31	38	6	35	67	149	27	58	63	35								17	24	20			32	177	131	102	109	86	41
60	71	71	184	77	78	34			15	16		5	41	52	101	122	73	136				1			34	14				3	49	32	45	79	62
93	65	177	88	49	65	19	16	5	1				9	120	64	47	53	15				9		14	6	125	55	5				3	127	95	47
183	84	154	94	93	43	99	17	87	46	1				90	45							17	43	73	10		5					62	84	143	234
68	64	52	57	53	106	87	354	101	132	64			23	288	290	307	134	23			77	52	48	55	64	25	23	35	0				4	21	22
40	46	58	143	68	69	95	88	188	160	41		44	232	226	211	259	240	114	76	76	118	8	29	113	80	59	150	21	11	82	13		27	37	14
11	18		10	25			26	27	36			85	288	135	128	56	153	84	9	26	28	53	77	60	71	40	36	44	63	48	59	11	5	14	
38	7	78	22	16	10					70		15	83	102	74	39	9	24					49	51	57	45	73			40	16	10	47	15	4
	12	11																														4			12

TABLE 3

MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures		
Period		:One calendar month.
Data monitored		:Reports from each unique identifier for synops & autosynops.
Standard of comparison		:Background field from UKMO global model.
Observation times		:00, 06, 12, 18 UTC
Elements monitored		:Surface pressure (hPa).
Parameters monitored	:HT(m)	:Station height (in metres) as given in WMO No. 9 Vol A
	:RP	:Pressure reporting practice M=mean sea level pressure (hPa) reported. S=Station level pressure reported. 8=Geopotential height (m) of 850 hPa surface reported. 7=Geopotential height (m) of 700 hPa surface reported.
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:%REJ	:Percentage of observations flagged excluding those with gross errors.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.
GROSS ERROR LIMIT	:15 hPa	(pressure)
SELECTION CRITERIA	:NOBS	≥ 20 ,and one or more of the following:
	1.|bias|	≥ 4 hPa
	2. SD	≥ 6 hPa
	3.PGE	≥ 25.

N.B. For stn ht ≥ 500m, mslp is that calculated from station level pressure where available.
For stn ht < 500m, mslp is that as reported by the station where available.

SUSPECT SYNOPS (PRESSURE) BY WMO REGION JUL 2006

WMO REGION 1:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60320	35.9N	5.4W	2	MS	41	0	0	0	1.2	-9.0	9.1
60423	36.3N	8.0E	680	S8	91	91	100	0			
61492	16.1N	13.5W	18	MS	62	1	2	0	1.2	4.1	4.3
63160	10.4N	45.0E	9	M	24	5	21	0	0.9	-4.0	4.1
63210	11.3N	49.2E	2	M	26	1	4	0	0.8	-4.3	4.4
63330	13.5N	39.5E	2070	MS	53	48	91	0	11.0	-9.3	14.4
63333	11.1N	39.7E	1903	MS	79	0	0	0	0.9	5.0	5.1
63334	10.3N	37.7E	2515	S	78	0	0	0	1.2	10.4	10.5
63450	9.0N	38.8E	2354	MS	101	0	0	1	1.0	4.3	4.4
63671	1.8N	40.1E	244	M	112	1	1	0	0.9	-4.4	4.5
63801	4.9S	29.6E	882	S8	33	1	3	6	5.0	6.9	8.5
63881	8.0S	31.6E	1923	S	53	2	4	2	0.6	13.1	13.1
67295	19.1S	33.5E	731	S8	68	7	10	0	1.0	13.2	13.2
68014	19.6S	18.1E	1411	S8	87	1	1	1	0.5	-7.2	7.2
68030	18.5S	25.6E	1071	M	87	0	0	0	4.0	10.4	11.1
68102	19.9S	16.4E	1343	S8	119	0	0	0	0.5	5.8	5.8
68300	26.6S	15.1E	16	MS	119	2	2	0	0.7	-13.6	13.6
68312	26.5S	18.1E	1067	S8	80	0	0	0	0.6	4.3	4.3
68396	26.5S	31.3E	641	S8	61	0	0	0	0.5	5.0	5.0
68575	30.0S	30.0E	1175	S8	121	121	100	0			

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
28666	55.3N	67.3E	140	MS	123	0	0	0	2.2	5.7	6.1
30554	54.5N	113.6E	995	MS	123	0	0	1	1.1	11.2	11.3
31534	50.4N	131.0E	230	MS	118	2	2	0	1.9	-4.5	4.9
35416	49.1N	54.7E	128	MS	123	1	1	1	0.7	4.1	4.2
36982	41.9N	78.2E	3635	S7	94	1	1	0	0.5	5.1	5.1
38846	38.4N	70.0E	1437	S8	112	1	1	1	1.9	-5.7	6.0
38944	37.5N	69.4E	448	MS	65	1	2	2	1.4	-6.0	6.2
40435	27.0N	44.1E	991	MS	62	0	0	2	1.2	7.6	7.7
40700	39.6N	47.9E	45	MS	116	2	2	1	0.9	-5.4	5.5
40713	37.4N	46.3E	1475	MS	118	45	38	2	0.7	13.6	13.6
40726	36.8N	45.7E	1384	MS	117	0	0	1	0.9	4.9	5.0
40741	36.5N	61.2E	235	MS	118	1	1	2	1.0	-4.6	4.7
40743	36.2N	57.7E	978	MS	123	0	0	1	0.8	6.2	6.3
40757	35.6N	53.4E	1171	MS	119	0	0	0	1.1	4.4	4.5
40780	33.6N	46.4E	1362	MS	119	0	0	0	0.5	5.2	5.2
40854	29.1N	58.4E	1067	M8	113	0	0	1	0.9	10.8	10.8
41241	26.2N	56.2E	3	MS	98	0	0	1	0.9	-4.1	4.2
41252	23.4N	56.5E	244	MS	81	0	0	0	0.6	-8.5	8.5
41254	23.1N	57.6E	1755	S8	104	104	100	0			
41466	13.7N	44.1E	1402	S8	66	0	0	0	0.6	-7.8	7.8
44416	28.6N	81.6E	720	MS	80	2	3	10	3.9	5.0	6.3
47022	40.8N	128.2E	1224	S	78	0	0	0	0.8	5.9	6.0
47678	33.1N	139.8E	79	MS	123	0	0	0	0.7	-8.8	8.8
48921	21.6N	101.9E	923	S	47	47	100	0			
48924	21.1N	101.5E	644	S	55	1	2	4	1.1	11.1	11.2
48925	20.7N	102.0E	550	S	48	0	0	0	1.0	-9.7	9.8
48938	19.2N	101.7E	326	MS	44	26	59	0	0.4	14.2	14.2
48957	14.8N	106.8E	105	MS	50	0	0	0	0.8	4.2	4.3
50978	45.3N	130.9E	234	MS	123	0	0	0	0.7	-5.5	5.5
52866	36.6N	101.8E	2262	S	123	0	0	0	0.9	-4.5	4.6
53646	38.3N	109.8E	1058	MS	123	0	0	0	0.9	-11.2	11.2
54292	42.9N	129.5E	178	MS	123	0	0	0	0.8	-8.7	8.7
56462	29.0N	101.5E	2994	S	123	0	0	0	0.9	8.0	8.1
56768	25.0N	101.5E	1773	S	123	0	0	0	0.5	-5.3	5.3

57816	26.6N	106.7E	1074	MS	123	59	48	0	0.5	-14.4	14.4
59023	24.7N	108.1E	214	MS	123	0	0	0	0.8	-5.5	5.6
59663	21.8N	112.0E	22	MS	123	0	0	0	0.6	-7.4	7.4

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
80426	9.4N	70.6W	582	MS	33	0	0	0	0.8	4.3	4.4
80475	7.6N	72.1W	327	MS	22	2	9	9	2.6	4.9	5.5
82181	2.0S	54.1W	146	MS	90	0	0	0	1.2	5.0	5.1
82287	3.1S	41.8W	46	MS	54	0	0	0	0.8	-4.4	4.5
83235	12.4S	46.4W	604	MS	90	0	0	0	1.0	5.6	5.7
83332	14.1S	46.4W	826	MS	90	13	14	3	1.3	13.6	13.7
83470	17.9S	50.9W	727	MS	87	0	0	0	0.8	-5.7	5.8
83531	18.6S	46.5W	940	MS	91	0	0	0	0.6	-6.5	6.5
83738	22.5S	44.5W	440	MS	89	0	0	8	0.8	-7.6	7.6
83836	25.5S	50.6W	837	MS	91	1	1	0	0.6	-4.8	4.8
83970	31.3S	50.9W	4	MS	67	0	0	0	0.9	-5.5	5.6
84132	0.9S	75.4W	215	MS	29	0	0	0	1.9	4.6	5.0
84140	1.1S	79.5W	73	MS	47	0	0	0	0.8	7.0	7.0
84143	1.0S	78.6W	2628	S7	41	3	7	10	1.4	-4.4	4.6
84160	1.3S	78.6W	2940	S7	39	3	8	0	0.4	13.9	13.9
84377	3.8S	73.3W	125	MS	116	0	0	1	1.6	4.5	4.8
84425	5.9S	76.1W	179	MS	21	0	0	0	1.3	5.4	5.6
84452	6.8S	79.8W	29	MS	108	0	0	0	0.7	5.1	5.1
84455	6.5S	76.4W	281	MS	87	0	0	0	1.3	7.4	7.5
84472	7.1S	78.5W	2620	S	58	0	0	0	1.0	-6.2	6.3
84474	7.2S	76.7W	350	S	23	1	4	9	1.1	9.4	9.5
84501	8.1S	79.0W	26	MS	83	0	0	0	0.6	4.6	4.6
84686	13.6S	72.0W	3248	S	115	0	0	1	1.2	-4.4	4.6
84688	13.7S	73.4W	3444	S	40	0	0	0	0.5	-13.3	13.3
84720	14.9S	75.0W	567	MS	58	0	0	0	0.9	4.1	4.2
84782	18.1S	70.3W	468	MS	84	0	0	0	1.0	4.1	4.2
85140	14.3S	67.4W	140	MS	60	0	0	0	1.2	8.6	8.7
85264	18.5S	64.1W	1998	S	58	58	100	0			
85312	19.8S	63.9W	992	S	42	0	0	12	1.3	-8.1	8.2
85406	18.5S	70.2W	55	M	120	0	0	0	0.9	4.2	4.3

WMO REGION 4:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
71060	52.5N	116.1W	230	MS	123	123	100	0			
71181	47.1N	55.3W	29	MS	123	0	0	0	0.6	-5.7	5.7
71581	45.5N	78.3W	330	S	121	0	0	0	0.5	-8.0	8.0
71979	53.8N	118.4W	1542	MS	98	0	0	0	0.6	10.3	10.3
72327	36.1N	86.7W	182	MS	116	0	0	0	0.6	4.3	4.3
72376	35.2N	111.8W	2181	MS	119	119	100	0			
76055	31.0N	114.9W	440	MS	57	57	100	0			
76225	28.6N	106.1W	1435	MS	96	1	1	0	0.9	-4.4	4.5
76382	25.5N	103.5W	1124	MS	73	1	1	0	0.6	4.2	4.2
76543	22.0N	98.8W	104	MS	62	0	0	2	1.4	9.3	9.4
76658	19.2N	103.7W	494	MS	27	0	0	0	0.6	7.1	7.1
76762	17.5N	99.5W	1265	MS	90	0	0	0	0.7	5.7	5.7
76843	16.8N	93.1W	528	MS	115	0	0	1	0.9	-4.9	5.0
78588	17.2N	87.5W	-283	M	87	87	100	0			
78627	15.3N	91.5W	1901	S	35	0	0	0	0.6	5.4	5.4

WMO REGION 5:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
92010	6.1S	145.4E	1587	M	36	0	0	3	1.3	9.3	9.4
97284	8.6S	120.5E	1170	S8	86	0	0	1	1.0	4.2	4.3

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01360	61.9N	7.9E	711	MS	106	0	0	0	0.8	5.4	5.5
04208	74.0N	57.8W	40	MS	119	119	100	0			
04330	74.3N	20.2W	44	MS	119	0	0	0	0.8	-4.9	5.0
04416	72.6N	38.4W	3202	S	109	0	0	0	0.6	5.4	5.4
06239	54.9N	44.7E	49	MS	368	68	18	0	7.1	2.8	7.6
06780	46.8N	9.8E	2690	S7	121	0	0	0	0.4	4.0	4.0
08226	40.7N	3.2W	639	MS	61	0	0	0	0.6	-5.1	5.1
08912	42.9N	0.8W	1434	MS	122	122	100	0			
08922	42.8N	0.2W	1660	MS	123	123	100	0			
10850	48.8N	10.7E	457	MS	369	0	0	0	0.4	-5.3	5.3
11933	49.1N	20.1E	1355	S8	123	0	0	0	0.6	4.0	4.0
13269	44.3N	19.9E	176	MS	123	1	1	1	0.4	7.6	7.6
14554	44.9N	18.4E	136	S	60	0	0	0	0.7	-12.6	12.6
16204	42.9N	11.8E	816	S	65	0	0	2	0.9	4.2	4.3
16344	39.3N	16.4E	1710	S8	355	0	0	0	1.1	5.5	5.6
16538	40.1N	9.3E	1022	S	31	0	0	3	2.0	9.3	9.5
17521	35.2N	33.5E	285	MS	92	92	100	0			

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89004	71.7S	2.8W	815	MS	63	0	0	33	1.9	-6.1	6.4
89266	72.2S	60.2W	91	S	347	311	90	0	7.9	-4.4	9.0
89272	74.8S	70.5W	1395	MS	256	256	100	0			
89577	80.4S	77.4E	4084	S	312	87	28	1	1.5	-0.4	1.6
89610	65.9S	113.1E	90	S	347	0	0	0	1.2	-8.1	8.2
89614	66.7S	111.5E	500	M	347	347	100	0			
89661	73.5S	169.8E	200	S	478	477	100	0			
89666	76.7S	163.0E	200	S	471	0	0	0	1.8	5.8	6.1
89769	78.5S	168.4E	50	S	881	0	0	0	1.9	-4.3	4.7
89811	66.7S	112.5E	1366	S	358	0	0	0	1.1	-4.3	4.4

TABLE 4A

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures

Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from UKMO global model.

Observation times :All hours combined.

Level(s) monitored :300.0 - 150.0 hPa

Elements monitored :TEMP in °C ; WIND in m s^{-1}

Parameters monitored

:N REP. :Number of observations received excluding duplicates.

:PG :Percentage of observations with gross errors.

:PR :Percentage of observations rejected by quality control including rejections from the duplicate check.

:PC :Percentage of observations with calm winds.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.

:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.

GROSS ERROR LIMITS :10.0 °C ; 60 m s^{-1} Vector Wind

SELECTION CRITERIA :N REP $\geq$ 20

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAH	1542	0	7	1.0	0.2	1532	0	8	0	4.5	0.3
AAL	8030	0	6	1.3	0.0	7623	0	6	0	4.6	0.4
AAR	794	1	3	1.6	-0.6	761	0	3	0	7.0	-0.3
ACA	3285	0	7	1.6	-0.1	2606	0	7	0	5.6	0.3
ACF	50	6	46	3.5	0.5	29	0	55	0	24.1	-3.3
ACI	187	0	13	1.0	0.2	187	0	13	0	6.2	-1.2
AEA	1132	0	4	1.7	0.7	956	0	3	0	6.2	0.2
AFL	656	1	5	1.9	0.2	385	0	5	0	8.8	0.6
AFR	5329	0	4	1.4	0.1	5187	0	3	0	4.8	0.3
AFZ	37990	0	9	1.5	0.8	37990	0	10	0	5.9	0.5
AJM	281	0	9	1.7	-0.4	216	0	11	0	11.0	1.2
AJX	34	0	6	1.2	0.6	32	0	3	0	4.4	0.1
AME	32	0	0	1.1	-0.2	32	0	0	0	4.8	0.8
AMT	1799	0	5	1.1	-0.1	1781	0	5	0	4.3	0.0
AMX	530	2	5	1.4	0.1	448	0	4	0	7.1	0.2
ANZ	8013	0	31	1.4	0.3	7996	0	32	0	7.0	-0.1
ATN	155	1	100	4.2	-3.1	136	0	7	0	10.8	0.4
AUA	722	0	2	1.6	0.8	693	0	1	0	4.4	0.4
AVA	541	0	2	1.3	-0.3	537	0	4	0	7.5	0.2
AVN	156	0	49	1.4	-0.1	156	3	70	0	9.3	-0.2
AWE	1010	0	2	1.0	-0.5	1005	0	3	0	4.9	0.3
AZA	692	0	5	1.7	0.5	574	0	4	0	7.3	0.0
BAW	760	0	27	1.9	-0.7	523	0	27	0	7.4	-0.1
BBR	160	0	1	1.5	0.6	146	0	1	0	5.7	0.1
BHP	48	2	8	2.0	-1.0	39	0	10	0	7.0	1.0
BMA	387	0	2	1.4	-0.3	365	0	2	0	3.8	0.9
BPA	394	1	13	1.7	0.2	376	0	11	0	8.8	0.3
BSK	32	0	6	2.2	-0.1	26	0	8	0	9.8	0.9
BWA	308	1	4	1.5	-0.3	252	0	3	0	4.2	0.5
CCA	272	1	10	2.4	0.7	241	1	100	0	12.2	-1.4
CES	688	0	5	1.7	-0.2	687	1	7	0	8.5	0.4
CFC	34	0	9	2.4	0.8	29	0	14	0	15.2	2.1
CFG	962	1	6	1.7	-0.1	725	0	8	0	9.3	0.2
CFY	83	0	1	1.2	-0.2	74	0	1	0	3.5	0.2
CGD	22	0	0	1.1	-0.6	20	0	0	0	3.6	-0.9
CGF	637	0	2	1.5	-0.3	534	0	2	0	3.3	0.6
CGH	576	0	1	1.4	-0.1	515	0	1	0	3.5	0.5
CKK	163	1	2	1.8	0.8	165	0	3	0	6.5	0.4
CKS	176	1	7	1.8	-0.1	142	0	7	0	7.7	0.7
CLX	298	1	7	2.1	-0.7	160	0	11	0	11.8	0.3
CNJ	35196	0	72	1.1	0.5	35196	0	72	0	4.7	0.1
COA	5231	0	10	1.4	-0.1	4960	0	8	0	4.8	0.5
CRG	29	3	10	1.9	-0.2	30	0	47	0	17.9	4.6
CRL	501	0	5	1.7	-0.1	465	0	5	0	7.7	0.5
CSN	199	2	2	1.3	0.0	198	1	3	0	7.3	0.7
CUB	357	1	10	1.9	0.2	277	0	100	0	11.1	1.2
DAB	1155	0	4	1.5	-0.3	1065	0	4	0	4.0	0.5
DAF	29	0	3	2.2	-0.3	28	0	4	0	8.4	-1.2
DAI	1356	0	7	1.4	0.1	1253	0	7	0	3.7	0.7
DAL	5253	0	28	1.6	0.4	4861	0	29	0	4.6	0.3
DLH	6277	0	5	1.4	0.0	6056	0	5	0	4.4	0.4
DRD	553	0	3	1.5	-0.4	538	0	3	0	6.1	0.8
EDW	61	0	3	1.7	-0.3	52	0	4	0	9.7	1.1
EEZ	214	2	5	1.5	0.0	162	1	7	0	8.5	1.1
EIA	291	2	9	1.8	-0.2	269	0	100	0	18.8	6.4
ELY	500	0	3	1.5	0.3	453	0	3	0	5.9	0.6
ETH	68	1	9	1.5	0.3	24	0	4	0	7.7	2.1
EVA	350	0	2	1.6	-0.3	349	0	3	0	5.8	0.1
FCA	259	1	7	1.3	0.1	207	0	7	0	8.4	1.1

		TEMPERATURE						WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
FDX	772	0	29	1.3	0.1	674	0	29	0	5.7	0.3
FGE	52	0	4	1.6	-0.7	48	0	4	0	4.4	1.1
FGI	397	0	4	1.6	-0.4	373	0	4	0	4.2	0.5
FGL	107	0	4	1.2	-0.1	102	0	4	0	4.1	0.7
FGN	36	0	8	1.6	0.3	35	0	6	0	4.7	1.3
FGS	452	0	5	1.5	0.2	423	0	5	0	3.9	0.9
FGZ	124	0	4	1.3	-0.1	120	0	4	0	3.5	0.8
FIN	418	0	3	1.5	0.1	333	0	4	0	7.0	0.1
FJI	1100	1	34	2.1	0.7	1095	1	30	0	7.2	0.1
FOJ	58	0	2	1.6	-0.7	50	0	2	0	3.9	0.4
FOM	805	0	38	1.4	-0.4	803	0	39	0	5.4	0.3
FOS	45	0	7	1.8	-1.1	43	0	7	0	4.9	1.4
FWI	859	1	8	1.5	-0.6	832	0	6	0	6.7	0.5
GCO	136	1	10	1.7	-0.5	114	0	18	0	14.7	-0.4
GEC	413	0	22	1.7	-0.2	387	0	22	0	11.6	0.9
GGC	87	0	7	2.1	0.4	87	0	6	0	7.1	0.5
GLO	34	12	50	1.6	0.0	34	3	50	0	14.7	3.0
GOJ	227	0	3	1.4	0.1	205	0	3	0	3.5	0.6
GRL	128	1	1	1.4	0.1	124	0	2	0	5.0	0.5
GSM	51	4	8	2.1	-0.7	30	0	10	0	8.3	-0.1
GTI	205	1	9	1.8	0.2	162	0	4	0	7.9	0.6
GVA	62	0	5	1.5	0.2	58	0	5	0	4.3	0.5
GVB	100	0	3	1.5	-0.2	94	0	2	0	4.3	0.4
GVF	115	0	1	1.8	-0.7	111	0	1	0	4.6	0.7
GVG	43	0	2	1.6	-0.7	39	0	3	0	4.1	0.7
GVH	73	0	3	1.5	-0.6	68	0	3	0	3.9	0.1
GVL	59	0	0	1.3	0.0	57	0	0	0	4.2	0.6
GVR	238	0	4	1.5	-0.2	227	0	4	0	4.5	0.7
GVS	23	0	9	1.2	0.2	20	0	10	0	5.0	0.2
GVT	47	0	9	1.6	-0.4	44	0	7	0	4.0	1.3
GVW	91	0	1	1.6	-0.4	87	0	1	0	4.0	0.5
GVX	37	0	5	1.6	-0.2	37	0	5	0	4.8	-0.1
GWW	159	0	4	1.5	-0.2	149	0	3	0	3.1	0.3
HAL	3155	0	10	1.5	0.3	3137	0	10	0	5.6	-0.2
HBI	205	0	5	1.5	-0.4	192	0	4	0	3.9	0.9
HBJ	128	0	2	1.7	-0.9	115	0	2	0	4.0	0.6
HMY	55	4	5	1.3	-0.1	53	0	2	0	5.8	0.9
IBE	4803	1	3	1.3	-0.1	4697	0	4	0	7.0	0.4
ICE	1173	0	3	1.7	-0.2	718	0	2	0	6.0	0.7
ILI	23	0	0	1.1	0.2	20	0	0	0	3.0	0.8
IWD	1026	0	3	1.2	-0.2	1016	0	4	0	6.0	0.6
JAL	810	0	7	1.8	0.0	801	0	7	0	7.5	0.4
JAZ	624	0	3	1.4	0.3	625	0	4	0	7.2	0.0
JKK	21	5	14	1.2	-0.7	21	0	14	0	7.4	0.1
JST	594	2	28	1.6	-0.5	599	0	27	0	5.0	0.4
KAC	114	0	1	1.4	0.6	113	0	0	0	3.8	0.6
KAI	23	0	17	2.4	1.7	21	0	14	0	8.1	0.6
KAL	1275	0	4	1.6	-0.2	1264	0	4	0	6.8	-0.4
KIW	43	5	51	1.4	-1.0	43	0	51	0	6.4	0.0
KLM	1811	0	9	1.5	0.0	1483	0	12	0	8.0	0.4
LAN	835	0	1	1.5	0.2	832	0	2	0	5.4	0.3
LAP	34	3	53	3.6	1.5	34	0	47	0	16.2	-1.7
LNE	289	1	2	1.4	0.0	288	0	2	0	6.7	0.6
LNR	311	0	49	1.4	-0.2	287	0	50	0	3.6	0.3
LOT	579	1	3	1.8	-0.8	376	0	4	0	8.0	-0.2
LTE	20	0	0	0.9	0.4	20	0	0	0	3.7	0.0
LTU	718	0	4	1.3	-0.3	654	0	4	0	5.1	0.8
LUZ	48	0	4	1.3	0.6	37	0	11	0	10.0	0.9
LVG	178	1	8	1.4	0.2	167	0	7	0	5.9	0.6

		TEMPERATURE						WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
MAS	321	0	4	1.4	0.1	313	0	4	0	5.2	0.5
MMZ	338	1	6	1.5	0.2	331	0	5	0	6.7	0.3
MON	118	3	8	1.3	-0.3	85	1	13	0	9.9	0.9
MPD	1221	0	4	1.4	-0.1	1175	0	4	0	6.8	0.4
MPH	261	0	6	1.8	-0.7	201	0	8	0	10.0	0.2
MSR	198	0	2	1.3	0.3	192	0	2	0	4.1	0.7
MXJ	318	2	12	2.0	-0.5	154	0	5	0	4.6	0.5
MYT	405	0	5	1.7	-0.4	326	0	4	0	6.9	0.6
NAO	226	0	3	1.3	-0.1	211	0	4	0	7.7	0.4
NCA	423	0	2	1.7	0.1	341	1	3	0	8.3	0.0
NOS	285	1	7	1.6	0.1	190	0	6	0	8.3	0.8
NWA	8492	0	7	1.5	-0.1	8191	0	7	0	6.4	0.2
NZL	6953	0	10	1.3	0.0	6953	0	10	0	4.5	0.1
OAE	369	1	9	1.5	-0.3	216	0	12	0	8.5	1.2
OEL	118	0	3	1.6	0.8	107	0	4	0	4.0	0.6
OOM	190	2	5	1.6	-0.2	146	0	5	0	6.5	1.1
OYK	786	0	48	1.5	-0.2	727	0	48	0	3.6	0.7
PAC	392	0	3	1.6	-0.5	352	0	3	0	6.9	-0.5
PAL	1521	1	2	1.5	-0.3	1509	0	5	0	8.1	0.1
PBI	1285	0	44	1.3	0.0	1279	1	44	0	7.1	0.0
PHB	30	0	10	1.3	0.1	28	0	11	0	4.3	2.2
PLM	583	0	4	1.9	1.1	520	0	4	0	7.0	0.0
PUA	21	0	48	1.8	-0.7	20	0	55	0	10.8	2.1
QFA	4539	0	47	1.3	0.1	4539	0	47	0	5.7	-0.8
RAM	768	1	2	1.5	-0.2	598	0	3	0	6.8	0.6
RCH	272	3	100	2.8	-0.7	196	0	100	0	9.8	1.5
RJA	39	0	5	1.3	-0.4	24	0	0	0	4.8	1.3
RRR	55	2	11	2.4	0.0	52	0	6	0	10.1	-0.2
RZO	1216	1	4	1.6	-0.6	1150	0	4	0	6.9	0.8
SAS	1152	0	60	1.5	-0.1	1078	0	60	0	4.1	0.7
SER	493	0	49	1.5	-0.1	454	0	50	0	3.6	0.6
SEU	183	1	12	2.1	0.1	152	0	11	0	11.2	0.7
SIA	694	0	3	1.4	0.1	686	0	2	0	4.4	0.2
SLM	148	1	3	1.1	-0.3	148	0	2	0	4.9	0.5
SOO	49	2	2	1.8	0.7	48	0	8	0	8.7	0.7
SQC	286	0	0	1.4	-0.2	277	0	0	0	4.8	-0.2
SSV	60	2	3	0.9	0.4	55	0	4	0	6.8	-0.6
SUG	34	0	0	1.5	0.1	33	0	0	0	4.9	0.6
SVH	433	0	5	1.1	0.9	433	0	5	0	3.4	-0.3
SWR	1849	0	4	1.4	-0.5	1799	0	4	0	4.1	0.6
TAG	58	0	14	2.3	1.0	40	0	10	0	4.7	-0.3
TAM	29	3	38	1.5	0.4	29	0	45	0	18.3	8.0
TAP	1399	1	3	1.4	-0.4	1283	0	3	0	6.0	0.6
TCV	71	0	100	3.2	2.7	70	0	4	0	10.7	1.3
TCX	304	0	3	1.2	-0.1	265	0	3	0	4.6	0.7
TFL	201	1	9	1.5	-0.2	147	0	61	0	8.8	0.6
THA	264	0	12	1.2	0.6	266	0	12	0	4.9	0.5
THT	1976	0	25	1.0	0.2	1959	0	27	0	7.7	-3.0
TOM	455	1	5	1.3	-0.1	430	0	4	0	7.1	0.5
TSC	631	1	5	1.7	-0.6	388	0	4	0	6.3	0.3
TSO	36	0	6	1.4	-0.4	20	0	20	0	17.1	-6.2
TUB	105	0	8	1.2	0.2	74	0	14	0	10.3	1.4
UAE	1119	0	5	1.4	0.4	1093	0	5	0	4.2	0.3
UAL	11199	0	19	1.2	-0.1	11091	0	19	0	5.1	0.3
UPS	1436	0	51	1.7	-0.1	952	0	50	0	6.5	0.5
USA	2053	0	3	1.3	-0.1	1961	0	3	0	4.4	0.5
VIR	2630	0	3	1.4	-0.2	2512	0	3	0	4.5	0.2
VLE	89	1	9	2.5	-1.5	75	0	8	0	7.8	0.6
VVJ	36	0	6	1.8	-0.5	36	0	3	0	5.6	-0.1

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
VVR	83	10	12	1.9	-0.4	83	0	4	0	5.9	0.2
WHT	177	0	5	1.3	-0.1	148	0	6	0	7.8	0.3
WJA	23	0	4	2.0	-0.5	23	0	4	0	4.2	-0.2
WOA	193	3	8	1.3	0.0	174	0	6	0	6.1	0.0
XLA	131	4	9	2.0	-0.2	119	0	8	0	10.3	-0.4
ZKN	125	0	3	1.5	0.0	117	0	3	0	4.3	0.7
ZKS	50	0	0	1.6	-0.6	46	0	0	0	4.7	1.3
4XE	87	0	3	1.7	-0.1	81	0	4	0	3.8	1.1
9MM	57	0	2	1.6	0.5	54	0	2	0	3.3	0.4
9VS	110	0	2	1.6	-0.3	101	0	2	0	4.5	0.5

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AU	52718	0	17	1.2	0.4	52723	0	17	0	4.9	0.4
B-	3782	0	28	1.0	0.1	567	9	68	0	22.2	5.8
EU	307657	0	28	1.2	0.2	307654	0	27	0	4.3	0.3
HK	8233	0	8	1.1	0.1	8233	0	8	0	4.9	0.2
JP	68496	0	66	1.3	0.7	68496	0	65	0	4.9	0.1
MK	2129	0	4	1.4	1.1	2129	0	4	0	6.9	1.2
SA	4036	0	10	1.3	-0.1	4036	0	10	0	6.1	0.7
UA	332512	0	99	1.1	-0.1	331976	0	99	0	4.5	0.4

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
A	235	0	2	1.5	-0.1	221	0	1	0	4.4	0.7
N	7529	0	12	1.5	-0.2	6884	0	12	0	4.5	0.6
S	25	0	0	1.0	-0.1	24	0	0	0	4.1	0.7

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
US AMDAR	1255031	0	66	1.1	0.3	1255019	0	66	0	4.9	0.6

TABLE 4B

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures

Period		:One calendar month.
Data monitored		:Statistics for each airline carrier.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from UKMO global model.
Observation times		:All hours combined.
Level(s) monitored		:1000.0 – 300.1 hPa
Elements monitored		:TEMP in °C ; WIND in m s^{-1}
Parameters monitored	:N REP.	:Number of observations received excluding duplicates.
	:PG	:Percentage of observations with gross errors.
	:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
	:PC	:Percentage of observations with calm winds.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.
GROSS ERROR LIMITS		:10.0 °C ; 60 m s^{-1} Vector Wind
SELECTION CRITERIA		:N REP $\geq$ 20

	TEMPERATURE					WIND				
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAL	52	0	6	1.6	-0.6	43	0	5	0	6.0	2.2
ACA	31	3	13	1.0	0.3	30	0	20	0	9.9	0.6
AFR	40	0	18	1.1	-0.3	39	0	21	0	8.9	-1.2
AFZ	44810	0	67	1.3	-0.3	44810	0	67	0	4.1	0.3
ANZ	304	0	18	1.6	0.2	311	0	16	0	5.0	0.1
CFC	93	1	6	1.5	0.4	80	0	8	0	8.4	1.8
CKS	33	0	0	1.0	-0.2	23	0	17	0	13.4	-0.4
CNJ	834340	0	85	1.8	0.5	834340	0	85	0	4.8	0.1
COA	35	0	3	1.1	-0.1	31	0	3	0	4.9	0.5
DAL	62	0	27	1.6	0.5	60	0	30	0	9.3	2.0
FDX	370	0	33	1.7	0.0	195	0	32	0	6.4	-0.1
FXI	103	2	7	2.2	0.2	99	0	2	0	7.3	1.2
GCO	56	0	7	1.1	0.4	52	0	8	0	8.4	1.0
GEC	162	0	23	1.3	0.0	155	1	30	0	10.4	0.6
GTI	34	0	18	1.7	0.5	32	3	22	0	11.5	2.0
HAL	142	0	8	2.2	0.0	142	0	6	0	5.7	1.0
ICE	59	0	7	2.1	-0.7	31	0	3	0	8.0	1.8
JKK	42	5	12	2.1	-0.6	42	0	5	0	7.4	0.3
KAL	42	0	2	1.2	0.1	41	0	2	0	5.5	1.3
KIW	25	0	44	2.5	1.3	25	0	40	0	5.8	1.9
LAN	78	0	10	1.7	0.1	77	0	13	0	5.5	1.2
MAS	34	0	6	1.2	0.4	34	0	6	0	5.4	1.9
NCA	46	0	0	1.2	0.1	47	0	2	0	6.9	-0.4
NWA	221	2	12	1.7	-0.3	218	0	9	0	6.9	-0.6
NZL	25766	0	55	0.9	0.1	25766	0	55	0	4.5	-0.1
OCE	20	0	0	2.6	2.1	20	0	0	0	5.6	-0.6
PAL	79	0	0	1.4	-0.5	78	0	4	0	4.7	-0.2
QFA	140	4	48	1.2	-0.2	140	0	46	0	6.0	0.5
RCH	35	3	100	2.7	0.9	20	0	100	0	9.8	-0.6
RRR	54	2	20	3.3	1.2	50	2	16	0	10.2	2.1
SIA	100	0	3	1.4	0.5	101	0	4	0	4.4	1.0
SQC	21	0	5	0.9	-0.2	21	0	5	0	4.3	1.2
SVH	30069	0	59	1.3	0.5	30069	0	59	0	4.1	0.4
THA	26	0	12	1.5	1.1	27	0	11	0	2.8	-0.3
THT	189	0	50	1.0	-0.1	189	0	50	0	6.0	-1.9
TOM	43	0	5	1.2	-0.4	41	0	5	0	5.0	-0.7
UAE	126	0	10	1.1	0.6	126	0	10	0	4.3	0.5
UAL	104	3	29	2.0	-0.6	106	0	25	0	6.9	-0.4
UPS	159	0	55	1.6	-0.4	91	0	54	0	5.6	0.0

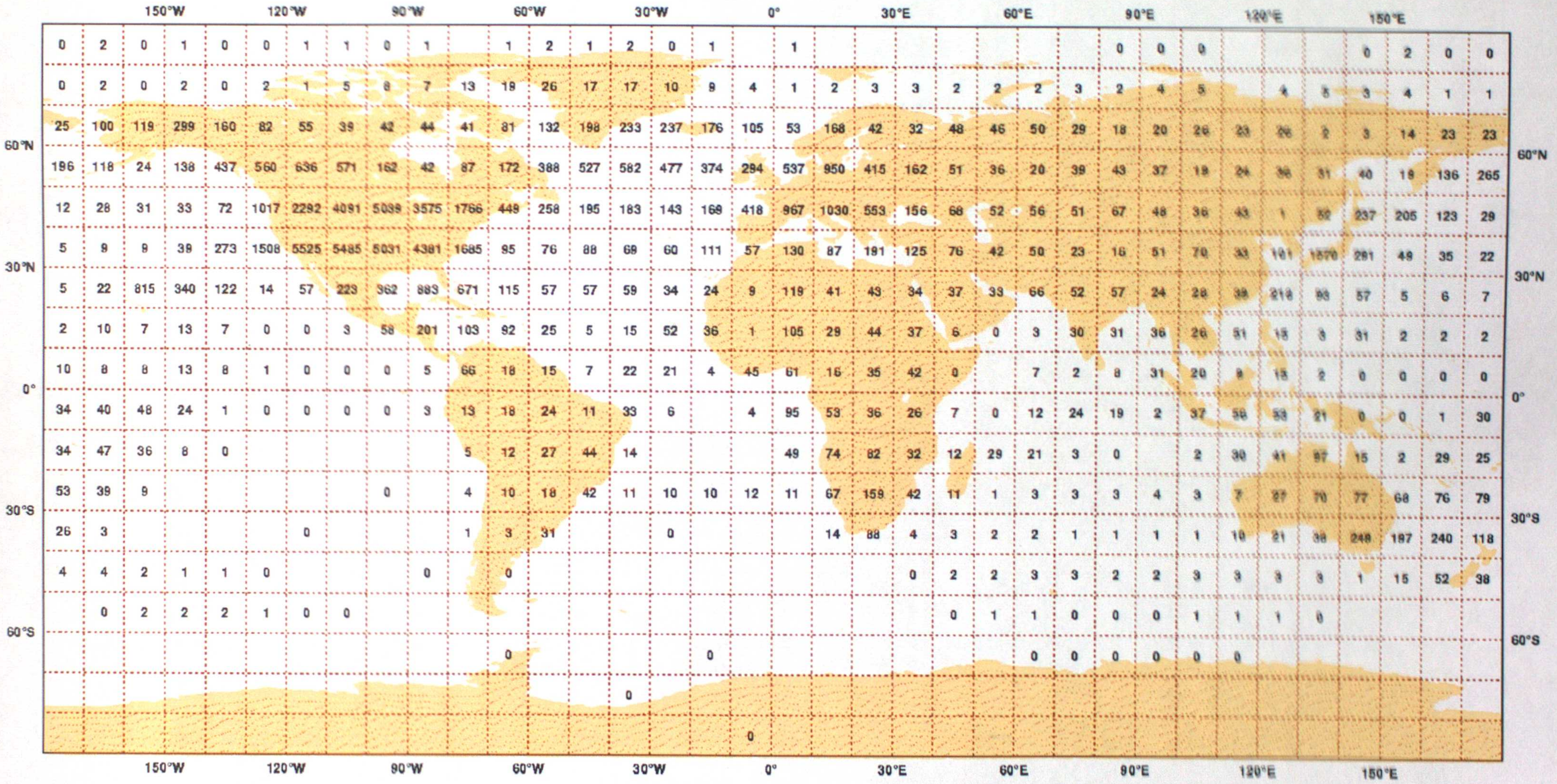
	TEMPERATURE					WIND				
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AU	68477	0	62	1.1	0.5	68582	0	62	0	4.1	0.2
B-	6140	0	29	1.3	-0.2	664	4	78	0	21.1	9.2
EU	691267	0	66	1.0	0.0	687162	0	66	0	3.4	0.2
HK	24714	0	86	1.2	-0.1	24714	0	86	0	4.0	0.4
JP	306509	0	82	1.2	0.1	306509	0	81	0	4.0	0.5
MK	1820	0	51	1.2	0.4	1820	0	51	0	4.7	0.7
SA	4138	0	69	1.2	0.2	4138	0	69	0	3.7	-0.1
UA	275837	0	99	1.1	-0.2	275471	0	99	0	3.6	0.4

	TEMPERATURE					WIND				
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
N	52	6	33	3.4	1.8	32	0	22	0	5.7	0.9

	TEMPERATURE					WIND				
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS

IDENT.	N.REP.	TEMPERATURE PG	PR	RMS	BIAS	N.REP.	PG	WIND PR	PC	RMS	BIAS
US AMDAR	1867101	0	81	1.1	0.1	1862493	0	81	0	3.8	0.4

Figure 3a. AIRCRAFT 300 - 150 hPa mean daily count. JULY 2006
Observations with O-B vector difference greater than 60 ms-1 excluded
Global average number of observations in 24 hours = 72727



0	2	0	1	0	0	1	1	0	1		1	2	1	2	0	1		1								0	0	0				0	2	0	0
0	2	0	2	0	2	1	5	8	7	13	19	26	17	17	10	9	4	1	2	3	3	2	2	2	3	2	4	5		4	5	3	4	1	1
25	100	119	299	160	82	55	39	42	44	41	81	132	198	233	237	176	105	53	168	42	32	48	46	50	29	18	20	26	23	26	2	3	14	23	23
196	118	24	138	437	560	636	571	162	42	87	172	388	527	582	477	374	294	537	950	415	162	51	36	20	39	43	37	19	24	36	31	40	19	136	265
12	28	31	33	72	1017	2292	4091	5039	3575	1766	449	258	195	183	143	169	418	967	1030	553	156	68	52	56	51	67	48	36	43	1	52	237	205	123	29
5	9	9	39	273	1508	5525	5485	5031	4381	1685	95	76	88	69	60	111	57	130	87	191	125	76	42	50	23	16	51	70	33	161	1570	281	49	35	22
5	22	815	340	122	14	57	223	362	883	671	115	57	57	59	34	24	9	119	41	43	34	37	33	66	52	57	24	28	39	218	93	57	5	6	7
2	10	7	13	7	0	0	3	58	201	103	92	25	5	15	52	36	1	105	29	44	37	6	0	3	30	31	36	26	51	15	3	31	2	2	2
10	8	8	13	8	1	0	0	0	5	66	18	15	7	22	21	4	45	61	16	35	42	0		7	2	8	31	20	9	15	2	0	0	0	0
34	40	48	24	1	0	0	0	0	3	13	18	24	11	33	6		4	95	53	36	26	7	0	12	24	19	2	37	56	53	21	0	0	1	30
34	47	36	8	0						5	12	27	44	14				49	74	82	32	12	29	21	3	0		2	30	41	97	15	2	29	25
53	39	9						0		4	10	18	42	11	10	10	12	11	67	159	42	11	1	3	3	3	4	3	7	27	70	77	68	76	79
26	3					0				1	3	31			0				14	88	4	3	2	2	1	1	1	1	10	21	38	249	187	240	118
4	4	2	1	1	0				0		0										0	2	2	3	3	2	2	3	3	3	3	1	15	52	38
	0	2	2	2	1	0	0															0	1	1	0	0	0	1	1	1	0				
											0					0								0	0	0	0	0	0						
														0																					
																	0																		

Figure 3b. AIRCRAFT 1000 - 301 hPa mean daily count. JULY 2006
Observations with O-B vector difference greater than 60 ms-1 excluded
Global average number of observations in 24 hours = 134513

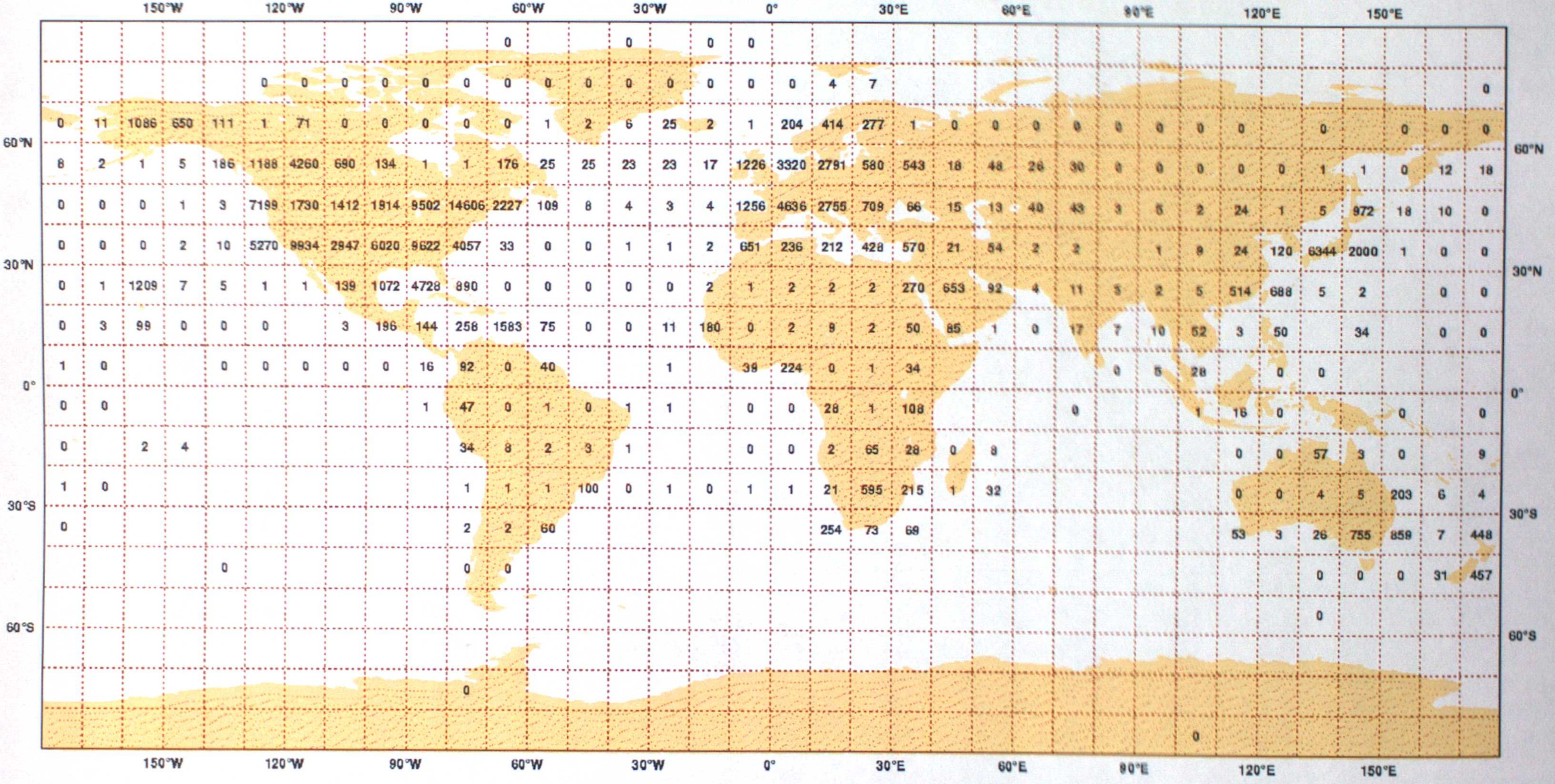

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 4 7 0
0 11 1086 650 111 1 71 0 0 0 0 0 1 2 6 25 2 1 204 414 277 1 0 0 0 0 0 0 0 0 0 0 0 0
8 2 1 5 186 1188 4260 690 134 1 1 176 25 25 23 23 17 1226 3320 2791 580 543 18 48 26 30 0 0 0 0 0 1 1 0 12 18
0 0 0 1 3 7199 1730 1412 1914 9502 14606 2227 109 8 4 3 4 1256 4636 2755 709 66 15 13 40 43 3 6 2 24 1 5 972 18 10 0
0 0 0 2 10 5270 9934 2847 6020 9622 4057 33 0 0 1 1 2 651 236 212 428 570 21 54 2 2 1 9 24 120 6344 2000 1 0 0
0 1 1209 7 5 1 1 139 1072 4728 890 0 0 0 0 0 2 1 2 2 2 270 653 92 4 11 5 2 5 514 688 5 2 0 0
0 3 99 0 0 0 3 196 144 258 1583 75 0 0 11 180 0 2 9 2 50 85 1 0 17 7 10 52 3 50 34 0 0
1 0 0 0 0 0 0 16 92 0 40 1 39 224 0 1 34 0 5 28 0 0
0 0 1 47 0 1 0 1 1 0 0 28 1 108 0 1 16 0 0 0
0 2 4 34 8 2 3 1 0 0 2 65 28 0 8 0 0 57 3 0 9
1 0 1 1 1 100 0 1 0 1 1 21 595 215 1 32 0 0 4 5 203 6 4
0 2 2 60 254 73 68 53 3 26 755 859 7 448
0 0 0 0 0 0 31 457
0
0
0

Figure 4a. AIRCRAFT 300 - 150 hPa mean winds. JULY 2006
Observations with O-B vector difference greater than 60 ms-1 excluded
Arrows are plotted where greater than 30 obs are present

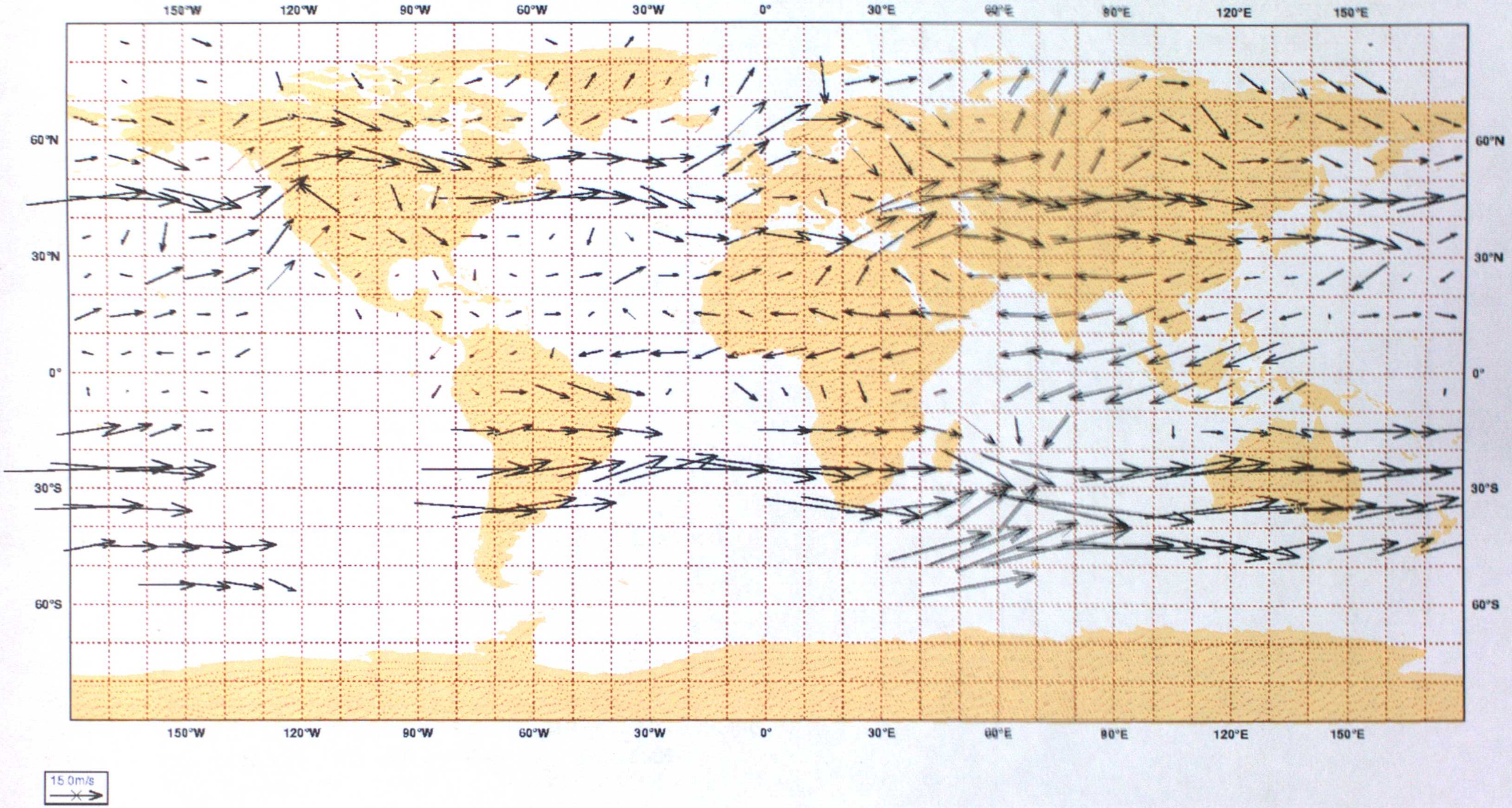

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
15.0m/s

Figure 4b. AIRCRAFT 1000 - 301 hPa mean winds. JULY 2006
Observations with O-B vector difference greater than 60 ms-1 excluded
Arrows are plotted where greater than 30 obs are present

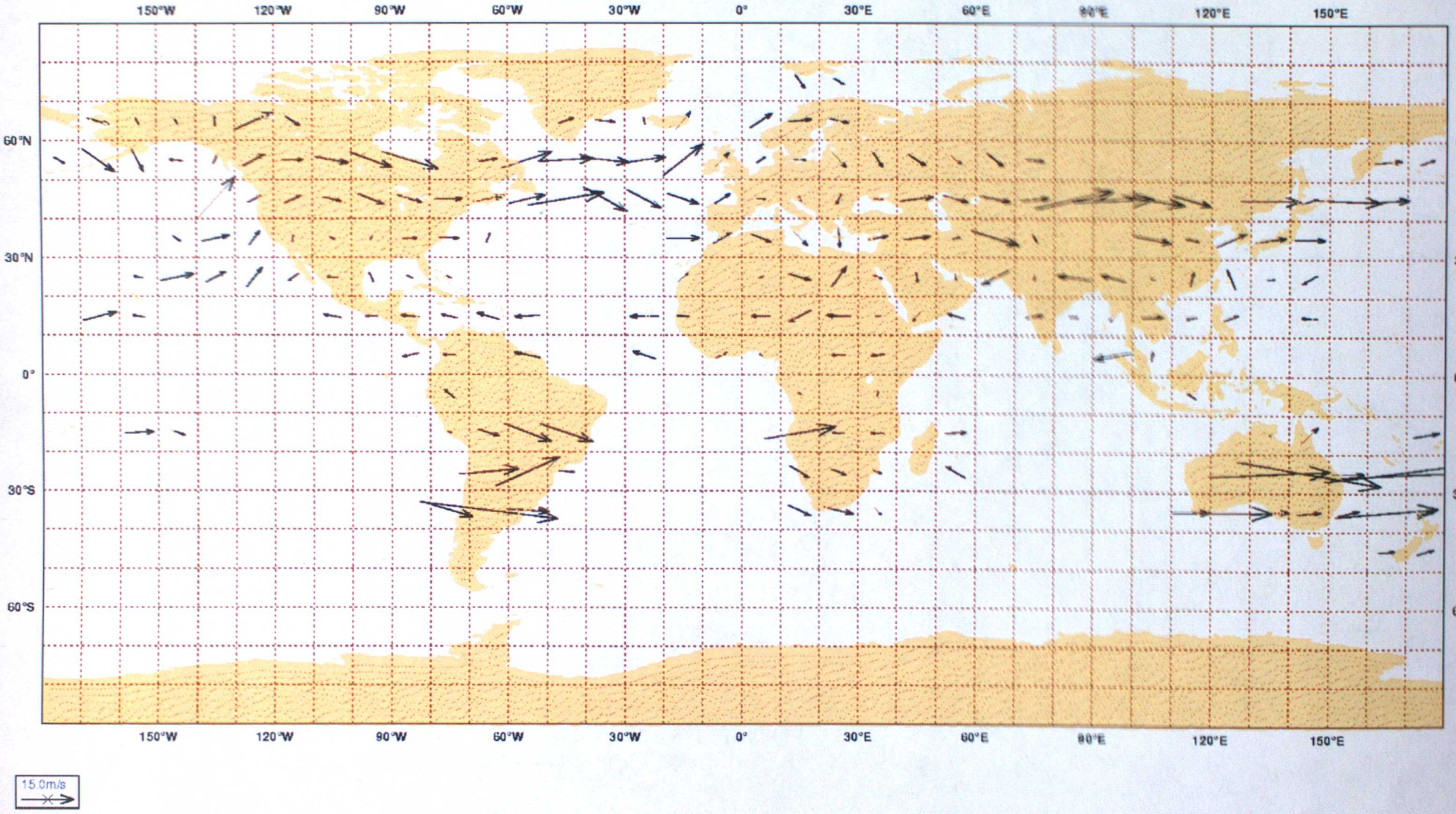

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
15.0m/s

Figure 5a. AIRCRAFT 300 - 150 hPa mean O-B winds. JULY 2006
Observations with O-B vector difference greater than 60 ms-1 excluded
Arrows are plotted where greater than 30 obs are present

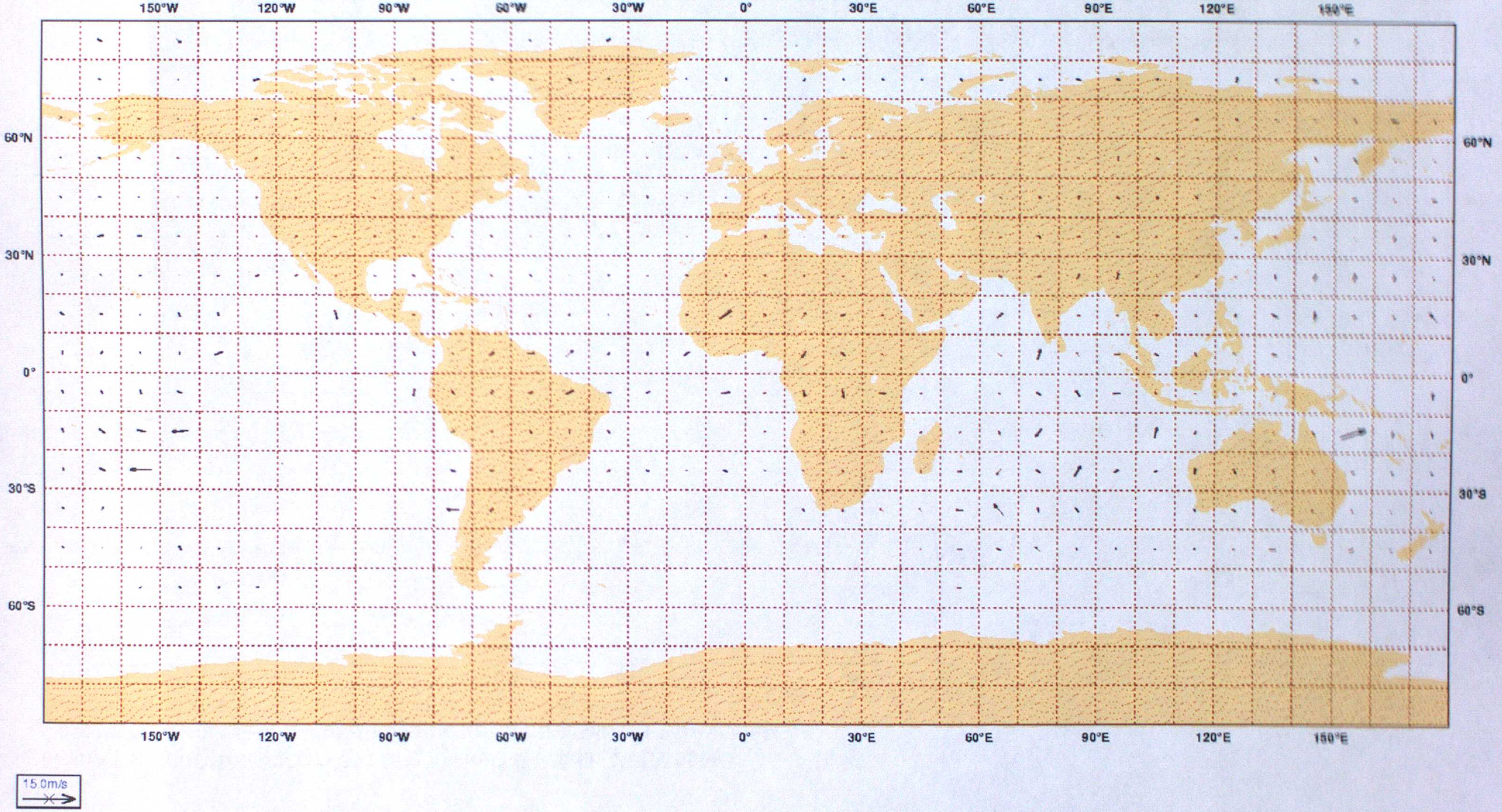

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
15.0m/s

Figure 5b. AIRCRAFT 1000 - 301 hPa mean O-B winds. JULY 2006
Observations with O-B vector difference greater than 60 ms-1 excluded
Arrows are plotted where greater than 30 obs are present

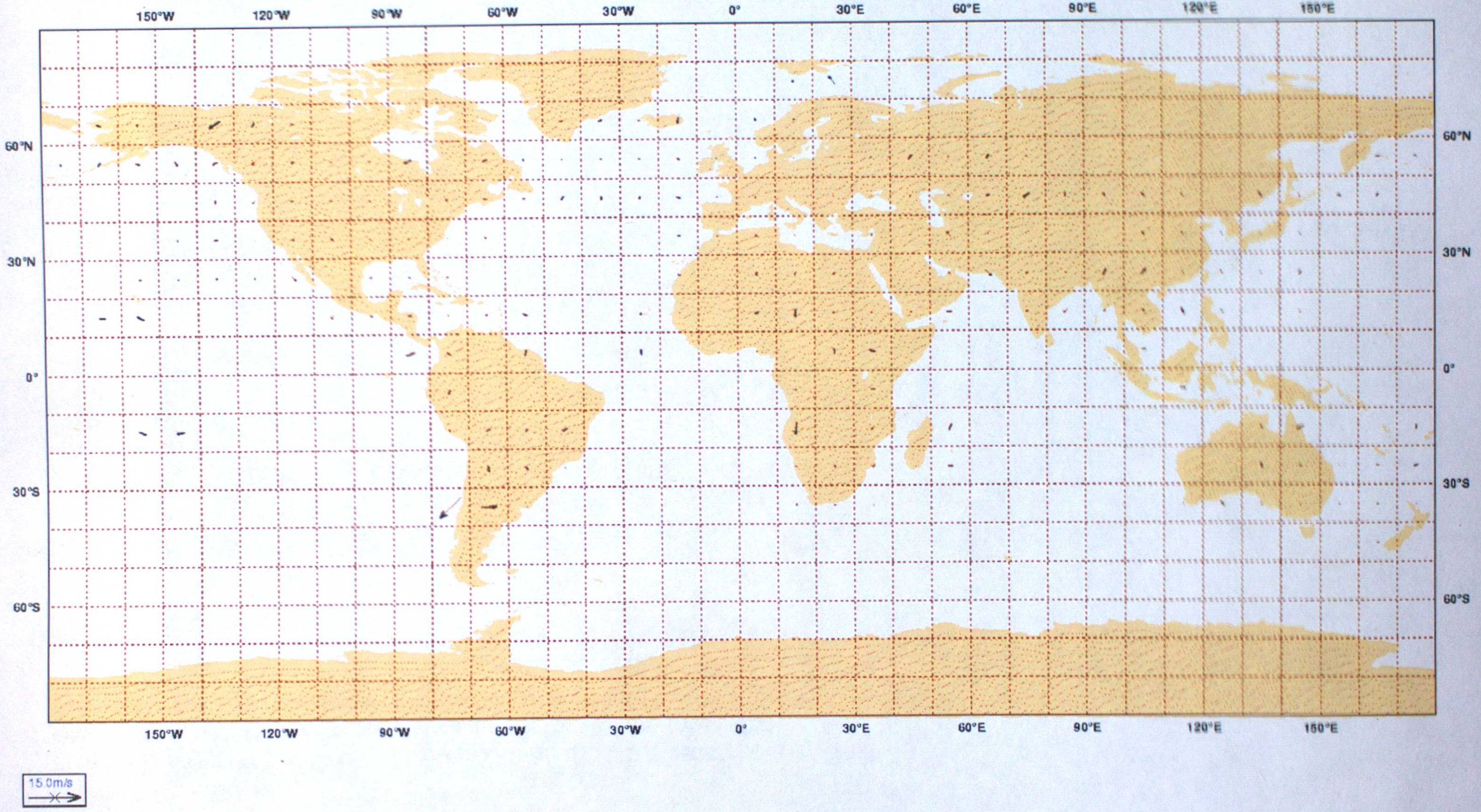
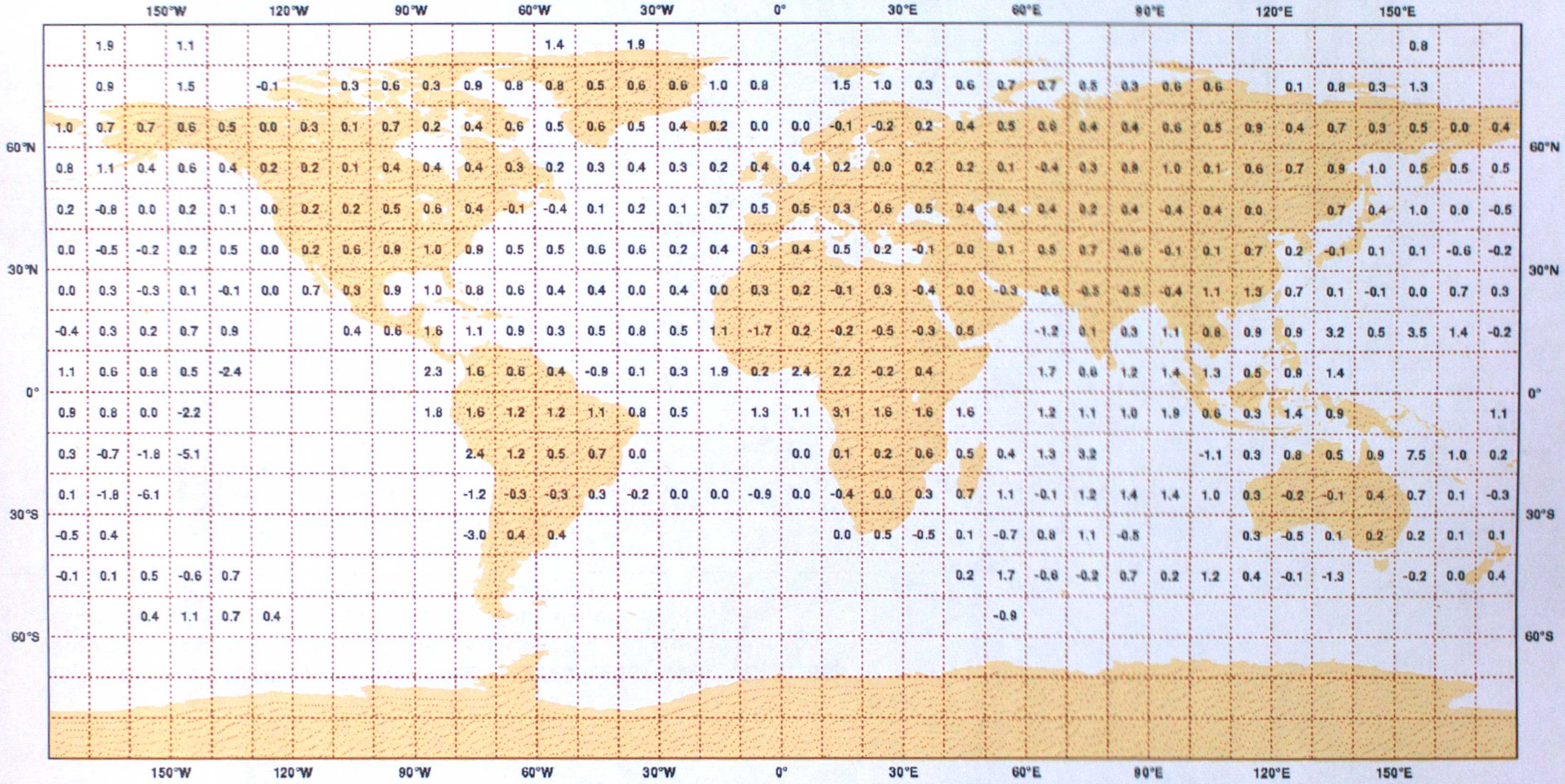

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
15.0m/s

Figure 6a. AIRCRAFT 300 - 150 hPa mean O-B speeds (ms-1). JULY 2006
Observations with O-B vector difference greater than 60 ms-1 excluded
Values are printed where greater than 30 obs are present



	1.9		1.1									1.4		1.9																			0.8		
	0.9		1.5		-0.1		0.3	0.6	0.3	0.9	0.8	0.8	0.5	0.6	0.6	1.0	0.8		1.5	1.0	0.3	0.6	0.7	0.7	0.5	0.3	0.6	0.6		0.1	0.8	0.3	1.3		
1.0	0.7	0.7	0.6	0.5	0.0	0.3	0.1	0.7	0.2	0.4	0.6	0.5	0.6	0.5	0.4	0.2	0.0	0.0	-0.1	-0.2	0.2	0.4	0.5	0.6	0.4	0.4	0.6	0.5	0.9	0.4	0.7	0.3	0.5	0.0	0.4
0.8	1.1	0.4	0.6	0.4	0.2	0.2	0.1	0.4	0.4	0.4	0.3	0.2	0.3	0.4	0.3	0.2	0.4	0.4	0.2	0.0	0.2	0.2	0.1	-0.4	0.3	0.8	1.0	0.1	0.6	0.7	0.9	1.0	0.5	0.5	0.5
0.2	-0.8	0.0	0.2	0.1	0.0	0.2	0.2	0.5	0.6	0.4	-0.1	-0.4	0.1	0.2	0.1	0.7	0.5	0.5	0.3	0.6	0.5	0.4	0.4	0.4	0.2	0.4	-0.4	0.4	0.0		0.7	0.4	1.0	0.0	-0.5
0.0	-0.5	-0.2	0.2	0.5	0.0	0.2	0.6	0.8	1.0	0.9	0.5	0.5	0.6	0.6	0.2	0.4	0.3	0.4	0.5	0.2	-0.1	0.0	0.1	0.5	0.7	-0.6	-0.1	0.1	0.7	0.2	-0.1	0.1	0.1	-0.6	-0.2
0.0	0.3	-0.3	0.1	-0.1	0.0	0.7	0.3	0.9	1.0	0.8	0.6	0.4	0.4	0.0	0.4	0.0	0.3	0.2	-0.1	0.3	-0.4	0.0	-0.3	-0.6	-0.5	-0.5	-0.4	1.1	1.3	0.7	0.1	-0.1	0.0	0.7	0.3
-0.4	0.3	0.2	0.7	0.9			0.4	0.6	1.6	1.1	0.9	0.3	0.5	0.8	0.5	1.1	-1.7	0.2	-0.2	-0.5	-0.3	0.5		-1.2	0.1	0.3	1.1	0.8	0.9	0.9	3.2	0.5	3.5	1.4	-0.2
1.1	0.6	0.8	0.5	-2.4					2.3	1.6	0.6	0.4	-0.9	0.1	0.3	1.9	0.2	2.4	2.2	-0.2	0.4			1.7	0.6	1.2	1.4	1.3	0.5	0.8	1.4				
0.9	0.8	0.0	-2.2						1.8	1.6	1.2	1.2	1.1	0.8	0.5		1.3	1.1	3.1	1.6	1.6	1.6		1.2	1.1	1.0	1.9	0.6	0.3	1.4	0.9				1.1
0.3	-0.7	-1.8	-5.1							2.4	1.2	0.5	0.7	0.0				0.0	0.1	0.2	0.6	0.5	0.4	1.3	3.2			-1.1	0.3	0.8	0.5	0.9	7.5	1.0	0.2
0.1	-1.8	-6.1								-1.2	-0.3	-0.3	0.3	-0.2	0.0	0.0	-0.9	0.0	-0.4	0.0	0.3	0.7	1.1	-0.1	1.2	1.4	1.4	1.0	0.3	-0.2	-0.1	0.4	0.7	0.1	-0.3
-0.5	0.4									-3.0	0.4	0.4							0.0	0.5	-0.5	0.1	-0.7	0.8	1.1	-0.5			0.3	-0.5	0.1	0.2	0.2	0.1	0.1
-0.1	0.1	0.5	-0.6	0.7																		0.2	1.7	-0.6	-0.2	0.7	0.2	1.2	0.4	-0.1	-1.3		-0.2	0.0	0.4
		0.4	1.1	0.7	0.4																		-0.9												

Figure 6b. AIRCRAFT 1000 - 301 hPa mean O-B speeds (ms-1). JULY 2006
Observations with O-B vector difference greater than 60 ms-1 excluded
Values are printed where greater than 30 obs are present

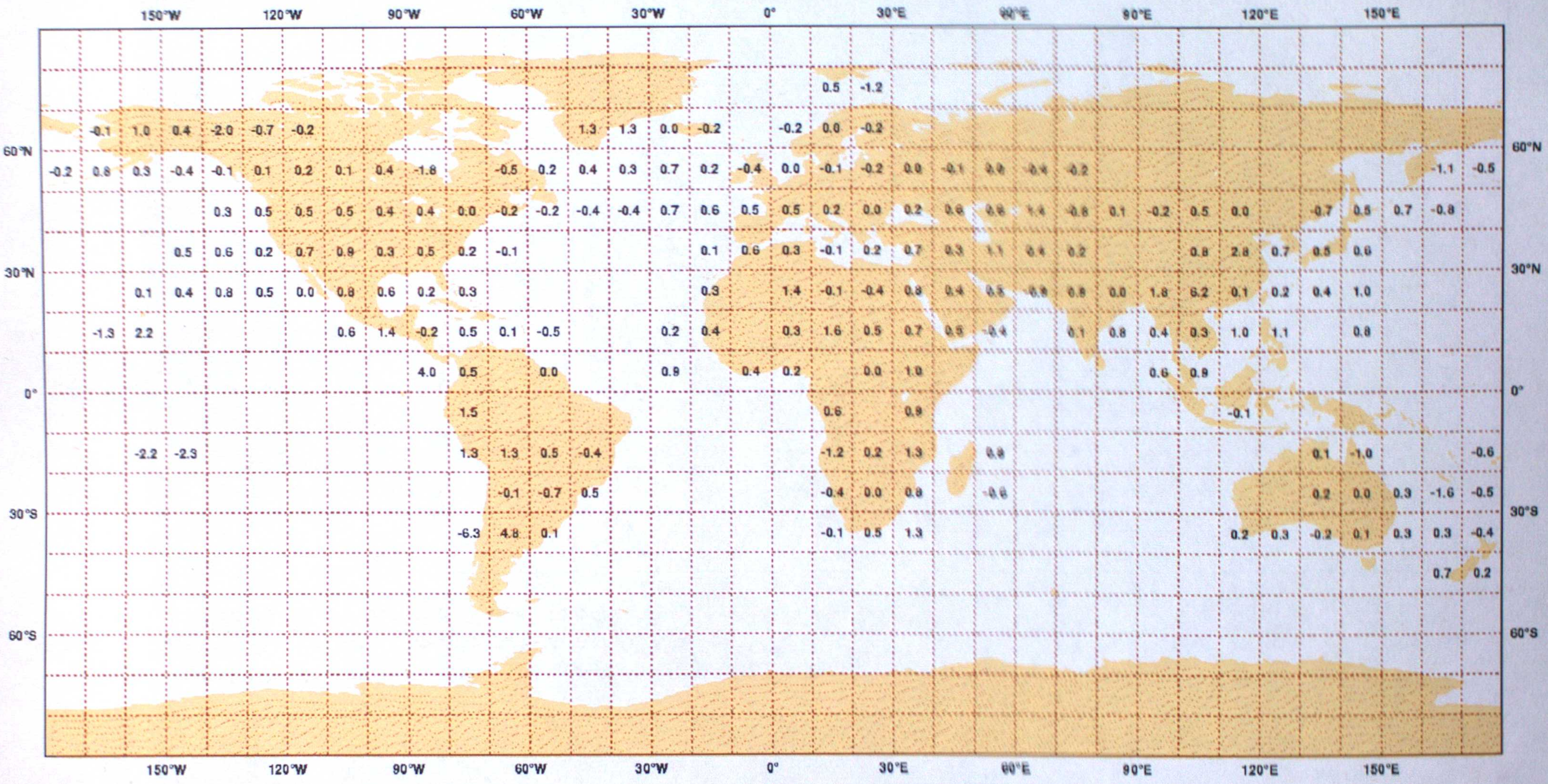
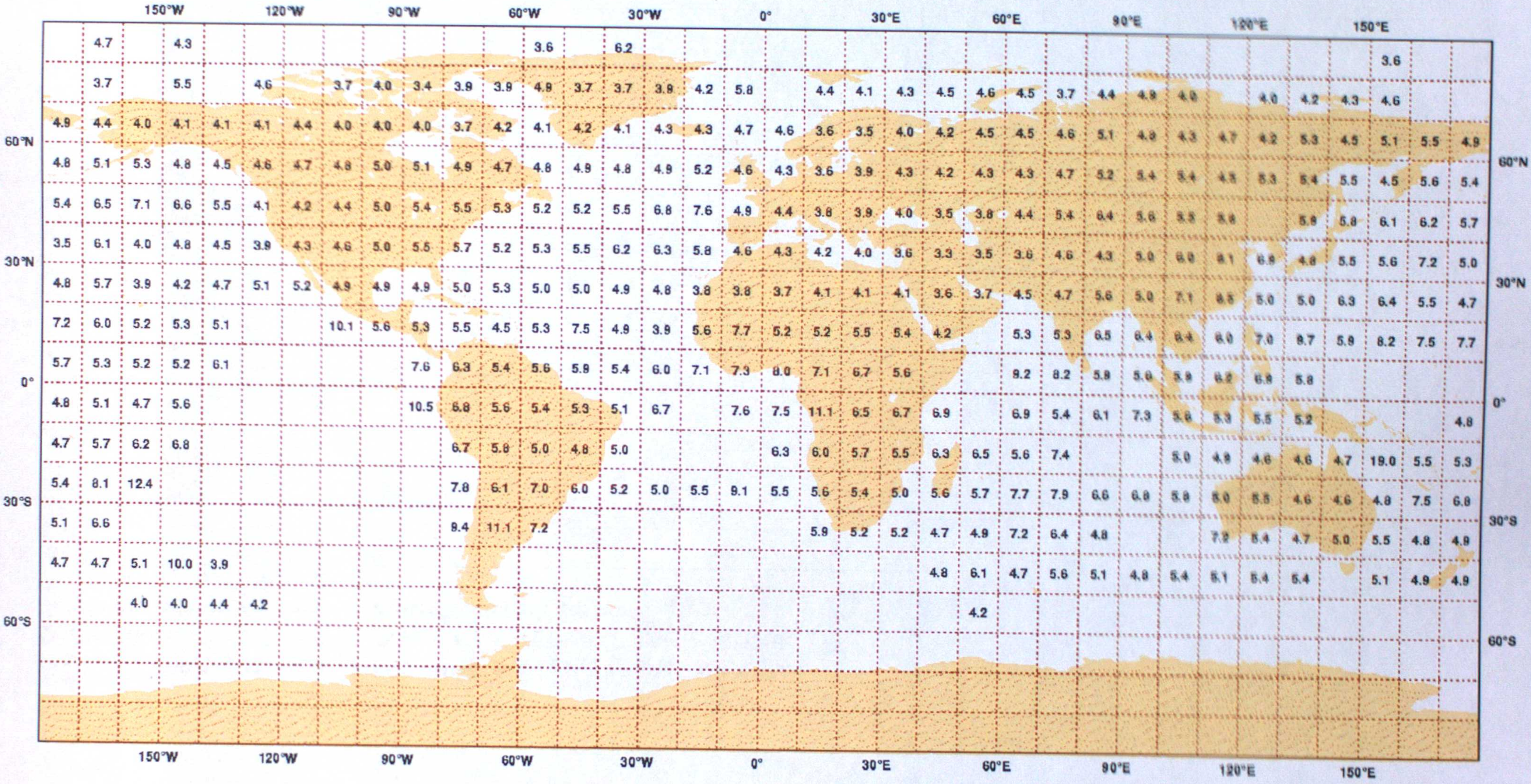

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
0.5 -1.2
-0.1 1.0 0.4 -2.0 -0.7 -0.2 1.3 1.3 0.0 -0.2 -0.2 0.0 -0.2
-0.2 0.8 0.3 -0.4 -0.1 0.1 0.2 0.1 0.4 -1.8 -0.5 0.2 0.4 0.3 0.7 0.2 -0.4 0.0 -0.1 -0.2 0.0 -0.1 0.0 -0.4 -0.2 -1.1 -0.5
0.3 0.5 0.5 0.5 0.4 0.4 0.0 -0.2 -0.2 -0.4 -0.4 0.7 0.6 0.5 0.5 0.2 0.0 0.2 0.6 0.8 1.4 -0.8 0.1 -0.2 0.5 0.0 -0.7 0.5 0.7 -0.8
0.5 0.6 0.2 0.7 0.9 0.3 0.5 0.2 -0.1 0.1 0.6 0.3 -0.1 0.2 0.7 0.3 1.1 0.4 0.2 0.8 2.8 0.7 0.5 0.6
0.1 0.4 0.8 0.5 0.0 0.8 0.6 0.2 0.3 0.3 1.4 -0.1 -0.4 0.8 0.4 0.5 -0.8 0.8 0.0 1.8 6.2 0.1 0.2 0.4 1.0
-1.3 2.2 0.6 1.4 -0.2 0.5 0.1 -0.5 0.2 0.4 0.3 1.6 0.5 0.7 0.5 -0.4 0.1 0.8 0.4 0.3 1.0 1.1 0.8
4.0 0.5 0.0 0.9 0.4 0.2 0.0 1.0 0.6 0.9
1.5 0.6 0.9 -0.1
-2.2 -2.3 1.3 1.3 0.5 -0.4 -1.2 0.2 1.3 0.8 0.1 -1.0 -0.6
-0.1 -0.7 0.5 -0.4 0.0 0.8 -0.6 0.2 0.0 0.3 -1.6 -0.5
-6.3 4.8 0.1 -0.1 0.5 1.3 0.2 0.3 -0.2 0.1 0.3 0.3 -0.4
0.7 0.2

Figure 7a. AIRCRAFT 300 - 150 hPa RMS O-B vector (ms-1). JULY 2006
Observations with O-B vector difference greater than 60 ms-1 excluded
Values are printed where greater than 30 obs are present



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60°W
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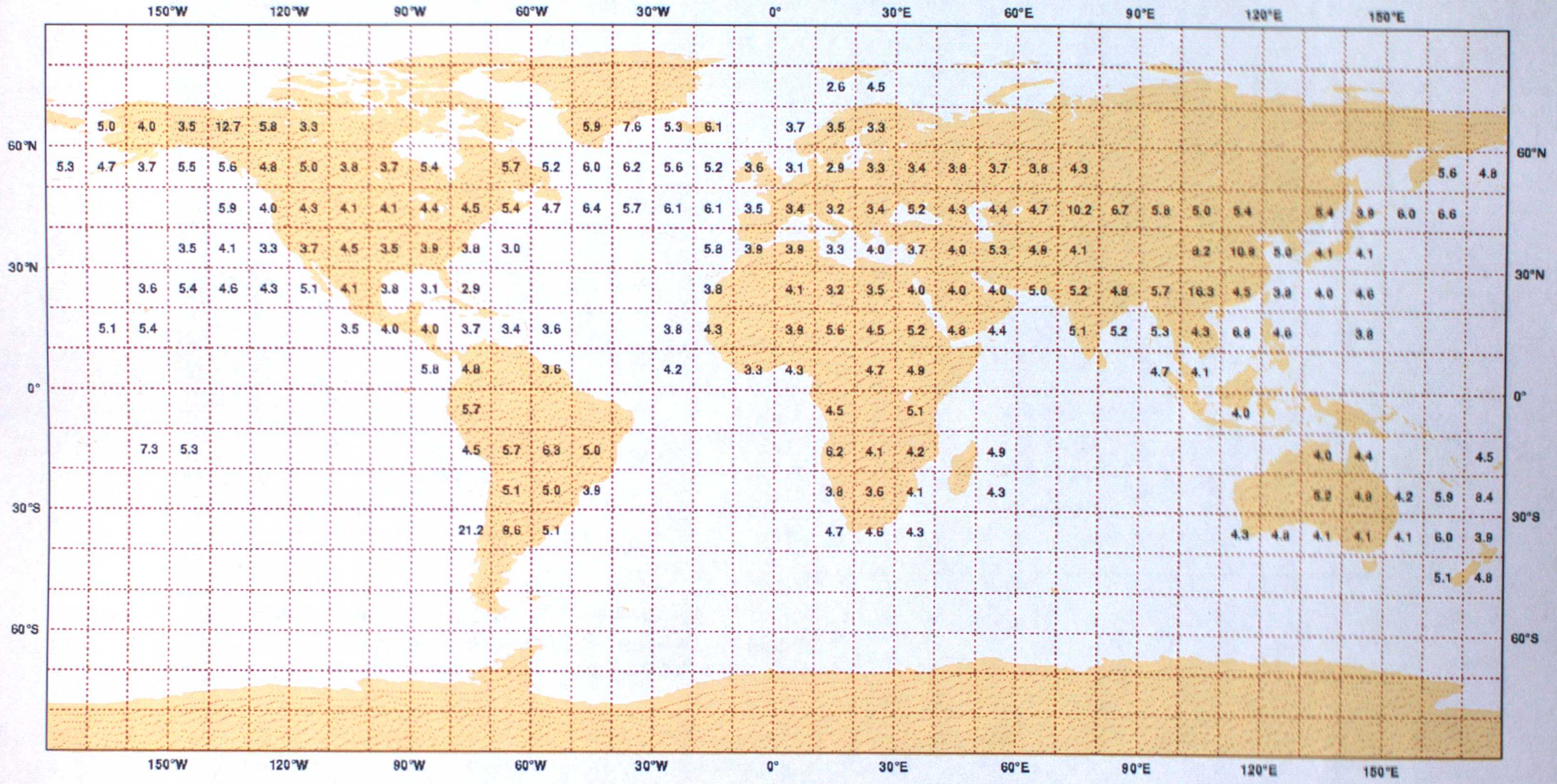
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S

Figure 7b. AIRCRAFT 1000 - 301 hPa RMS O-B vector (ms-1). JULY 2006
Observations with O-B vector difference greater than 60 ms-1 excluded
Values are printed where greater than 30 obs are present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90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
2.6 4.5
5.0 4.0 3.5 12.7 5.8 3.3 5.9 7.6 5.3 6.1 3.7 3.5 3.3
5.3 4.7 3.7 5.5 5.6 4.8 5.0 3.8 3.7 5.4 5.7 5.2 6.0 6.2 5.6 5.2 3.6 3.1 2.9 3.3 3.4 3.8 3.7 3.8 4.3 5.6 4.8
5.9 4.0 4.3 4.1 4.1 4.4 4.5 5.4 4.7 6.4 5.7 6.1 6.1 3.5 3.4 3.2 3.4 5.2 4.3 4.4 4.7 10.2 6.7 5.8 5.0 5.4 5.4 3.9 6.0 6.6
3.5 4.1 3.3 3.7 4.5 3.5 3.9 3.8 3.0 5.8 3.9 3.9 3.3 4.0 3.7 4.0 5.3 4.8 4.1 8.2 10.8 5.0 4.1 4.1
3.6 5.4 4.6 4.3 5.1 4.1 3.8 3.1 2.9 3.8 4.1 3.2 3.5 4.0 4.0 4.0 5.0 5.2 4.8 5.7 16.3 4.5 3.8 4.0 4.6
5.1 5.4 3.5 4.0 4.0 3.7 3.4 3.6 3.8 4.3 3.9 5.6 4.5 5.2 4.8 4.4 5.1 5.2 5.3 4.3 6.8 4.6 3.8
5.8 4.8 3.6 4.2 3.3 4.3 4.7 4.9 4.7 4.1
5.7 4.5 5.1 4.0
7.3 5.3 4.5 5.7 6.3 5.0 6.2 4.1 4.2 4.9 4.0 4.4 4.5
5.1 5.0 3.9 3.8 3.6 4.1 4.3 5.2 4.8 4.2 5.9 8.4
21.2 8.6 5.1 4.7 4.6 4.3 4.3 4.8 4.1 4.1 4.1 6.0 3.9
5.1 4.8

TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from UKMO global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 1000.0 - 30.0 hPa

Element monitored :GEOPOTENTIAL HEIGHT IN metres

Parameters monitored :NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period excluding those with gross errors.

:SD :SD of difference of observations from background values at level shown excluding those with gross errors.

:BIAS :Mean difference of observations from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

:NUM LEVELS :Number of levels satisfying selection criteria.

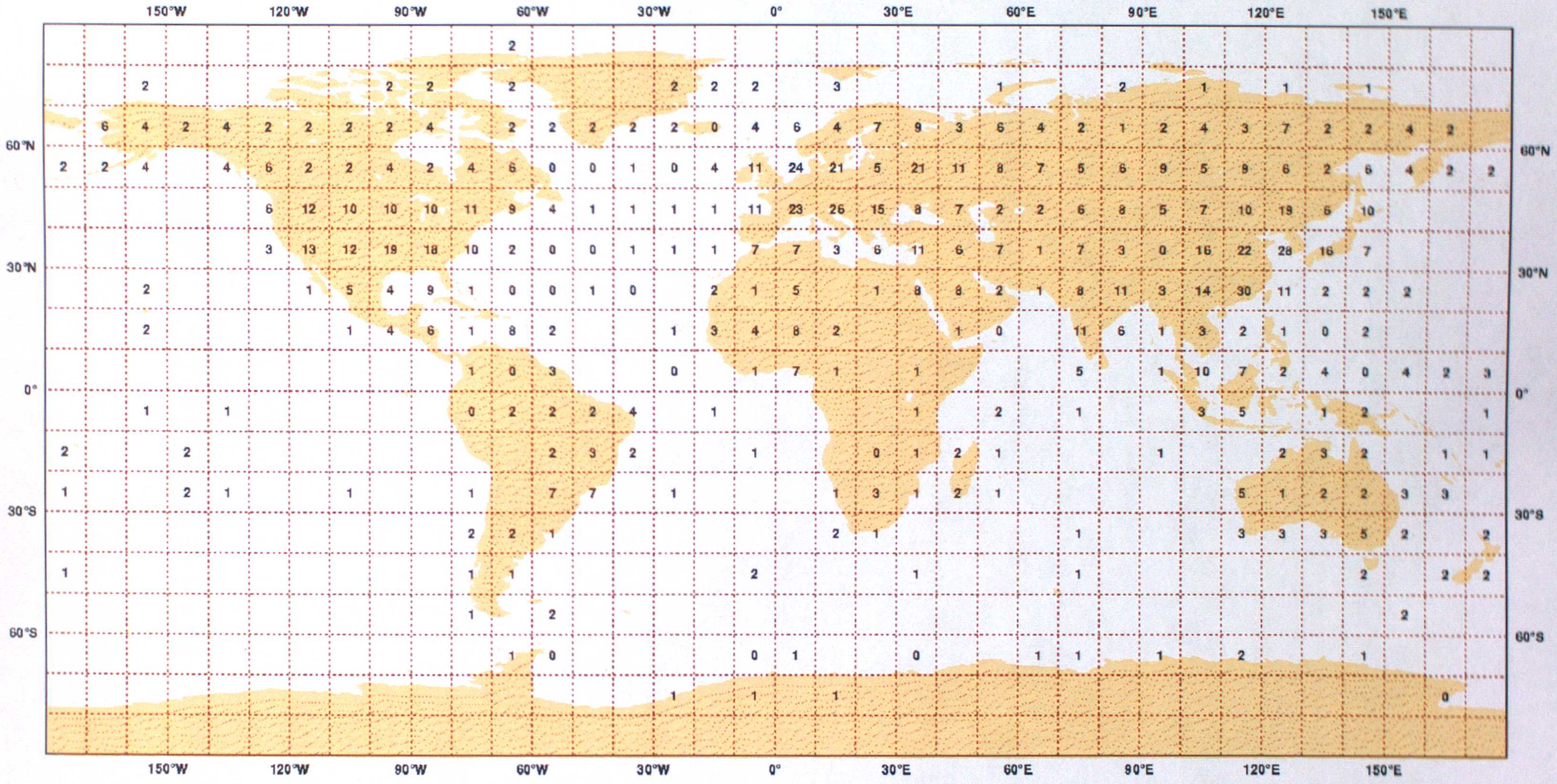
GROSS ERROR LIMITS :Defined in Appendix I.1

SELECTION CRITERIA : ≥3 levels with ≥10 observations and ≥ 100 m weighted RMS.

ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
22820	12	Z	50	62/ 34	21	0	71.9	187.3	200.7	8
42027	00	Z	200	34/ 75	18	1	90.1	-110.0	142.2	5
42027	12	Z	200	34/ 75	10	1	117.9	-14.2	118.8	5
42182	00	Z	200	29/ 77	21	3	71.2	-121.1	140.5	8
42182	12	Z	50	29/ 77	15	1	62.1	190.2	200.1	10
42314	00	Z	200	27/ 95	17	1	51.5	-155.9	164.2	7
42339	00	Z	200	26/ 73	13	3	144.0	-73.9	161.9	8
42339	12	Z	400	26/ 73	21	1	58.1	-18.0	60.8	6
42369	00	Z	200	27/ 81	19	4	34.9	-148.9	152.9	9
42369	12	Z	30	27/ 81	10	1	196.0	146.1	244.5	11
42397	00	Z	400	27/ 88	14	3	79.9	-54.7	96.9	4
42397	12	Z	250	27/ 88	12	0	85.0	-66.1	107.7	5
42410	00	Z	200	26/ 92	17	1	101.0	-75.2	125.9	9
42410	12	Z	200	26/ 92	13	0	51.5	-116.2	127.1	7
42492	00	Z	1000	26/ 85	24	0	19.2	-71.9	74.4	8
42492	12	Z	1000	26/ 85	21	3	18.4	-73.6	75.9	5
42647	00	Z	1000	23/ 73	14	2	13.2	-45.9	47.8	9
42647	12	Z	1000	23/ 73	20	1	12.7	-60.0	61.4	4
42667	00	Z	200	23/ 77	20	1	82.0	-68.6	106.9	5
42701	12	Z	150	23/ 85	16	0	86.8	-92.4	126.8	6
42724	00	Z	200	24/ 91	15	0	58.7	-110.5	125.1	7
42809	00	Z	1000	23/ 88	27	0	25.5	-32.7	41.5	10
42809	12	Z	1000	23/ 88	30	0	26.5	-45.3	52.5	9
42867	00	Z	200	21/ 79	25	0	102.3	-94.4	139.2	8
42867	12	Z	200	21/ 79	24	0	54.5	-99.5	113.4	9
42874	00	Z	150	21/ 82	13	0	85.1	-65.1	107.1	6
42874	12	Z	150	21/ 82	9	1	64.1	-148.2	161.5	6
42971	00	Z	1000	20/ 86	24	1	20.8	-48.3	52.5	9
42971	12	Z	1000	20/ 86	25	3	20.2	-63.1	66.2	9
43003	00	Z	1000	19/ 73	24	5	12.1	-75.0	75.9	11
43003	12	Z	1000	19/ 73	23	6	13.4	-73.3	74.6	10
43150	00	Z	1000	18/ 83	23	4	14.5	-62.9	64.5	11
43192	00	Z	1000	15/ 74	18	0	11.1	-70.2	71.1	4
43279	00	Z	200	13/ 80	26	0	78.2	-63.7	100.8	5
43279	12	Z	150	13/ 80	25	1	91.6	-67.0	113.5	6
43285	00	Z	100	13/ 75	10	1	101.1	-85.4	132.3	4
43311	00	Z	150	11/ 73	10	1	59.5	-151.5	162.8	7
43333	00	Z	100	12/ 93	12	0	103.7	-59.3	119.5	5
43333	12	Z	150	12/ 93	15	1	71.4	-136.3	153.8	5
43353	00	Z	1000	10/ 76	24	3	7.1	-88.7	88.9	5
43369	00	Z	150	8/ 73	21	0	111.5	-79.3	136.8	6
43369	12	Z	100	8/ 73	10	0	88.9	79.4	119.2	4
43371	00	Z	150	8/ 77	24	1	69.9	-138.4	155.0	5
48601	00	Z	250	5/ 100	1	0	0.0	101.0	101.0	4
78866	00	Z	400	18/ -63	16	0	65.5	-20.7	68.6	5
82099	12	Z	200	0/ -51	7	8	71.1	201.0	213.2	6
96163	00	Z	1000	-1/ 100	1	24	0.0	-65.0	65.0	6
96163	12	Z	1000	-1/ 100	4	17	42.6	-60.8	74.2	11
96935	00	Z	200	-7/ 113	20	3	68.8	-67.4	96.3	7
96935	12	Z	100	-7/ 113	20	1	122.8	-33.3	127.2	8
97014	00	Z	500	2/ 125	26	0	44.9	-27.5	52.7	5
97014	12	Z	250	2/ 125	26	1	74.8	36.6	83.3	9
97180	00	Z	200	-5/ 120	25	2	49.8	-123.9	133.6	13
97180	12	Z	1000	-5/ 120	27	0	7.2	-52.3	52.8	4
97560	00	Z	300	-1/ 136	8	2	80.2	-42.0	90.5	9

Figure 8. TEMP 500 hPa geopotential mean daily count. JULY 2006
All hours
Global average number of observations in 24 hours = 1221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30°E
60°E
90°E
120°E
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0°
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60°S

TABLE 6

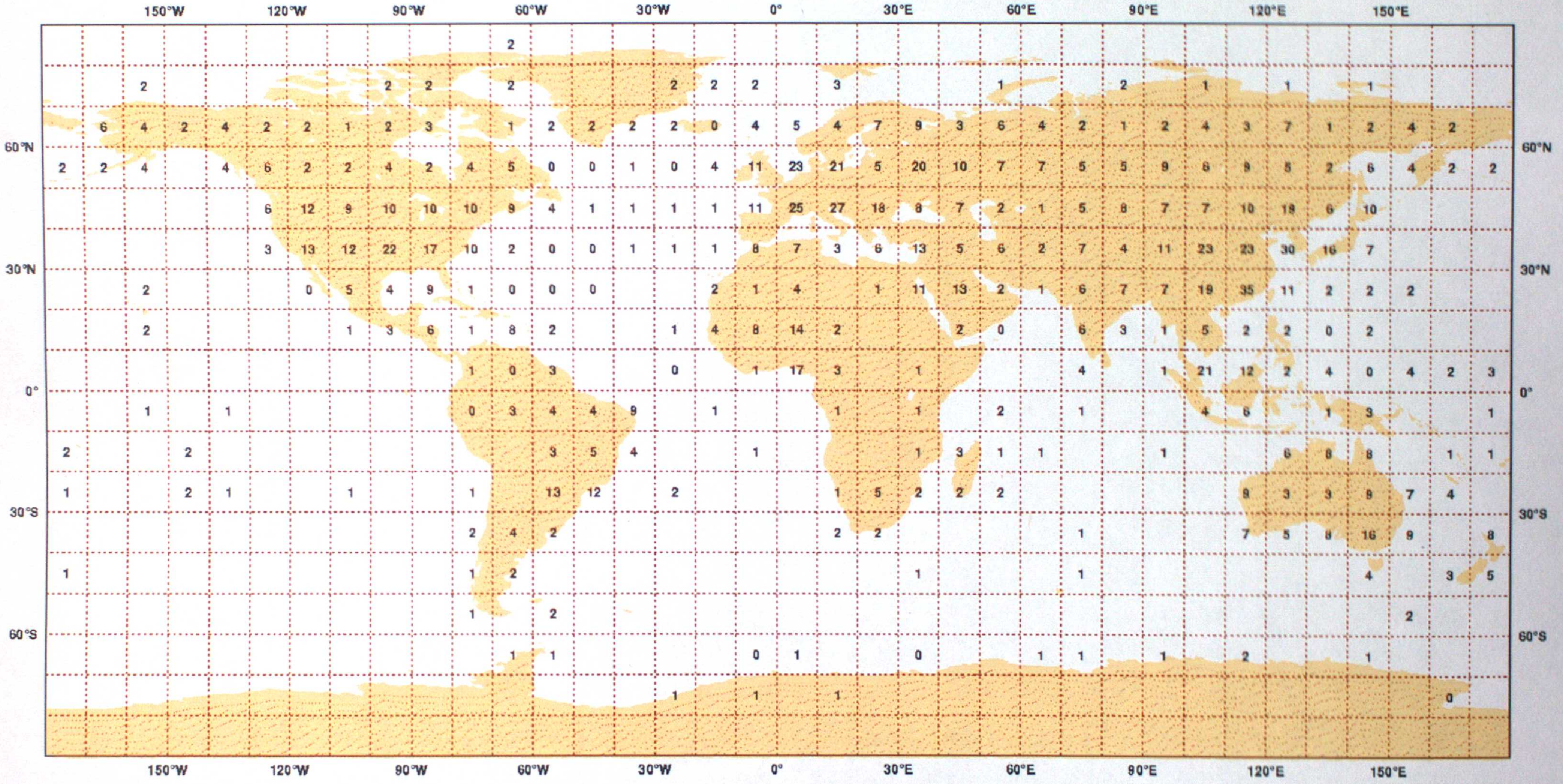
MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures		
Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from UKMO global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 1000.0 - 100.0 hPa
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored		
	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period excluding those with gross errors.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.2	
SELECTION CRITERIA	: ≥ 10 observations and ≥ 15 m s^{-1} RMS vector wind.	

ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
07761	12	V	400	42/ 9	25	0	8	-1.2	0.9	15.3	1
42701	00	V	100	23/ 85	14	0	100	7.3	9.1	19.0	1
43295	12	V	100	13/ 78	12	0	100	7.3	-6.1	15.0	1
43333	12	V	150	12/ 93	16	0	56	-6.8	9.1	15.0	1
43346	00	V	250	11/ 80	10	0	100	-1.0	-3.4	15.6	1
43369	00	V	150	8/ 73	11	0	100	14.2	6.3	25.1	2
43369	12	V	150	8/ 73	10	0	100	9.7	4.6	20.6	4
43371	00	V	100	8/ 77	13	0	100	12.8	2.5	17.3	1
43371	12	V	100	8/ 77	12	0	100	11.5	3.6	17.4	1
43599	12	V	100	-1/ 73	26	0	100	10.5	4.0	17.0	1
48407	12	V	100	15/ 105	14	0	100	9.4	13.9	19.1	1
48568	12	V	150	7/ 101	24	0	100	2.3	10.3	15.9	2
60590	12	V	250	31/ 3	10	0	100	-15.1	1.4	17.4	1
63741	00	V	100	-1/ 37	16	0	100	15.3	3.5	19.9	1
63894	12	V	100	-7/ 39	14	0	7	13.2	5.1	16.9	1
64400	12	V	150	-5/ 12	11	0	18	8.1	4.8	15.4	1
64458	12	V	150	2/ 16	21	0	100	11.1	2.3	18.0	1
89009	00	V	300	-90/ 0	28	0	100	-0.7	-14.6	21.5	4
94638	00	V	250	-34/ 122	29	0	3	0.1	3.7	15.8	1
94995	00	V	150	-32/ 159	20	0	10	-9.5	-2.8	33.2	2
96035	00	V	300	4/ 99	28	0	14	1.7	2.2	15.4	1
96163	00	V	150	-1/ 100	23	0	95	8.7	8.9	18.5	1
96163	12	V	150	-1/ 100	16	0	100	12.5	11.1	21.0	2
97180	12	V	150	-5/ 120	26	0	100	2.6	3.8	15.3	1
97560	00	V	100	-1/ 136	10	0	50	-10.4	-8.1	17.0	1

Figure 9. TEMP/PILOT 300 hPa wind mean daily count. JULY 2006
All hours
Global average number of observations in 24 hours = 1402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90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S

TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from UKMO global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 500.0 - 150.0 hPa
Element monitored		:WIND DIRECTION in degrees
Parameters monitored		
	:NUM OBS	:Average number of observations at all levels.
	:BIAS	:Mean difference of observations from background values from all levels.
	:MAX SPREAD	:(For observation - background values) Maximum absolute difference of SD at any level from SD at all levels
	:SD	:SD of difference of observations from background values at all levels.

SELECTION CRITERIA

:NUM OBS ≥ 5, and
ABSOLUTE BIAS ≥ 10°, with
SD < 30°, and
MAX SPREAD < 10°

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
31873	00	DD	46/ 134	22	12.6	4.0	14.1
31873	12	DD	46/ 134	25	13.8	8.0	17.7
33791	12	DD	48/ 33	26	-13.9	8.9	13.7
34731	00	DD	47/ 40	25	12.6	7.0	14.7
43333	12	DD	12/ 93	13	12.8	7.4	18.7
48568	12	DD	7/ 101	20	13.9	7.1	24.2
62306	00	DD	31/ 27	27	26.0	4.3	19.1
97014	00	DD	2/ 125	21	11.7	6.8	17.5
97014	12	DD	2/ 125	20	10.8	7.3	15.6

MONITORING OF SATELLITE WINDS

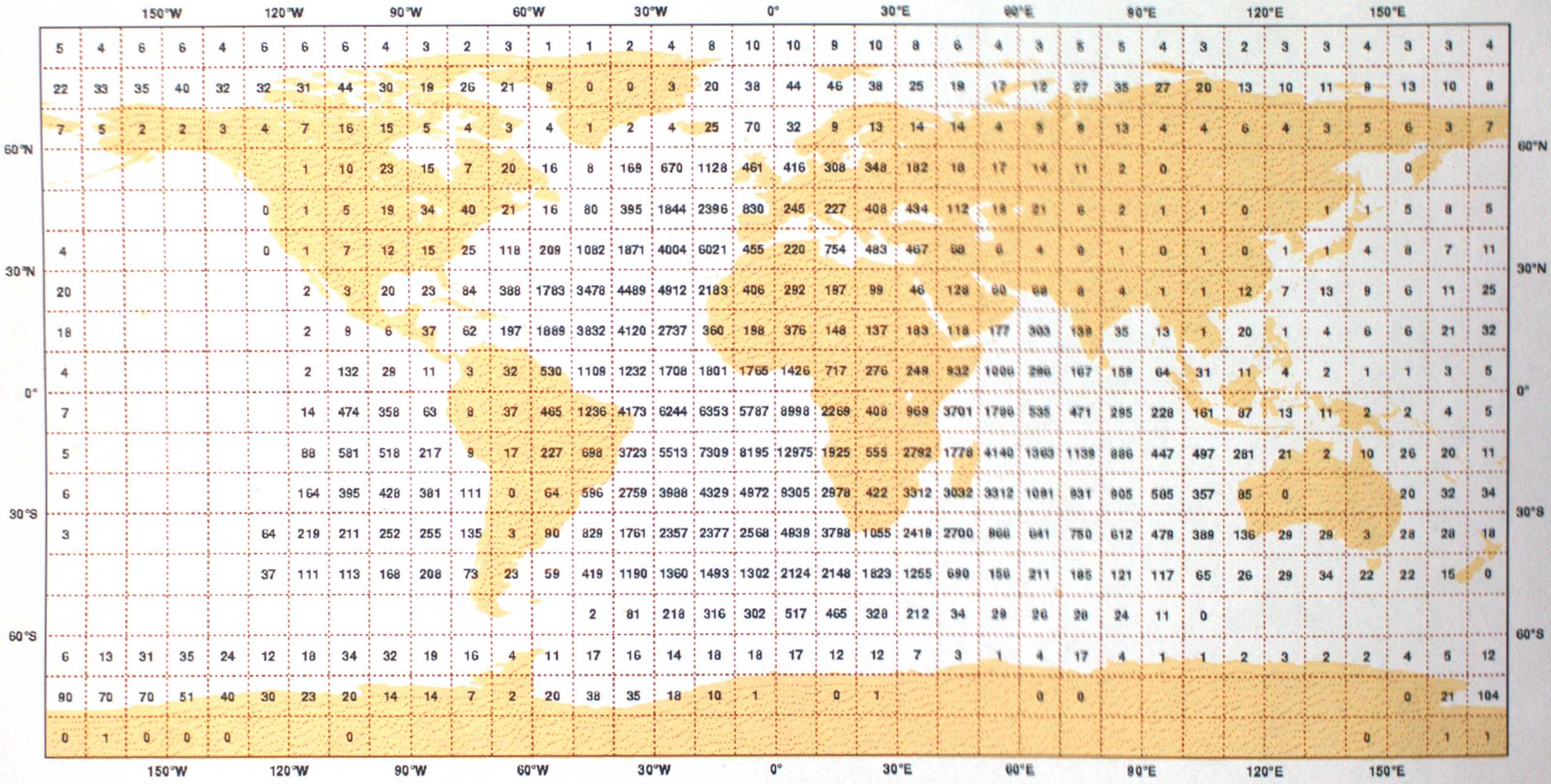
MONITORING CENTRE: EXETER

MONTH: Jul 06

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from GOES-9, GOES-10, GOES-12, METEOSAT-5, METEOSAT-7
Standard of comparison	:Background field from UKMO global model.
Selection Criteria	:number of observations > 10.
Data Extracted	:Layer 701 - 1000 hPa 401 - 700 hPa 101 - 400 hPa :Mean wind :Mean observation minus background vector wind differences :Mean observation minus background speed differences :RMS of observation minus background vector differences

Figure 10. SATOB 701 - 1000 hPa mean daily count. JULY 2006
Global average number of observations in 24 hours = 271067



5	4	6	6	4	6	6	6	4	3	2	3	1	1	2	4	8	10	10	9	10	8	6	4	3	5	5	4	3	2	3	3	4	3	3	4
22	33	35	40	32	32	31	44	30	19	26	21	8	0	0	3	20	38	44	46	38	25	19	17	12	27	35	27	20	13	10	11	9	13	10	8
7	5	2	2	3	4	7	16	15	5	4	3	4	1	2	4	25	70	32	9	13	14	14	4	5	9	13	4	4	6	4	3	5	6	3	7
						1	10	23	15	7	20	16	8	169	670	1128	461	416	308	348	182	18	17	14	11	2	0						0		
					0	1	5	19	34	40	21	16	80	395	1844	2396	830	245	227	408	434	112	19	21	6	2	1	1	0		1	1	5	8	5
4					0	1	7	12	15	25	118	209	1082	1871	4004	6021	455	220	754	483	467	68	6	4	0	1	0	1	0	1	1	4	8	7	11
20						2	3	20	23	84	388	1783	3478	4489	4912	2183	406	292	197	99	46	128	60	68	8	4	1	1	12	7	13	9	6	11	25
18						2	9	6	37	62	197	1889	3832	4120	2737	360	198	376	148	137	183	118	177	303	138	35	13	1	20	1	4	6	6	21	32
4						2	132	28	11	3	32	530	1109	1232	1708	1801	1765	1426	717	276	249	932	1008	286	167	158	64	31	11	4	2	1	1	3	5
7						14	474	358	63	8	37	465	1236	4173	6244	6353	5787	8998	2269	408	969	3701	1798	535	471	295	228	161	87	13	11	2	2	4	5
5						88	581	518	217	9	17	227	698	3723	5513	7309	8195	12975	1925	555	2792	1778	4140	1363	1139	886	447	497	281	21	2	10	26	20	11
6						164	395	428	381	111	0	64	596	2759	3988	4329	4972	9305	2978	422	3312	3032	3312	1081	831	905	585	357	85	0			20	32	34
3					64	219	211	252	255	135	3	90	829	1761	2357	2377	2568	4839	3798	1055	2419	2700	868	641	750	612	478	389	136	29	29	3	28	28	18
					37	111	113	168	208	73	23	59	419	1190	1360	1493	1302	2124	2148	1823	1255	690	158	211	185	121	117	65	26	29	34	22	22	15	0
													2	81	218	316	302	517	465	328	212	34	29	26	28	24	11	0							
6	13	31	35	24	12	18	34	32	19	16	4	11	17	16	14	18	18	17	12	12	7	3	1	4	17	4	1	1	2	3	2	2	4	5	12
90	70	70	51	40	30	23	20	14	14	7	2	20	38	35	18	10	1		0	1				0	0								0	21	104
0	1	0	0	0			0																									0		1	1

Figure 11. SATOB 701 - 1000 hPa vector mean wind. JULY 2006
All observations
Arrows are plotted where greater than 10 obs are present

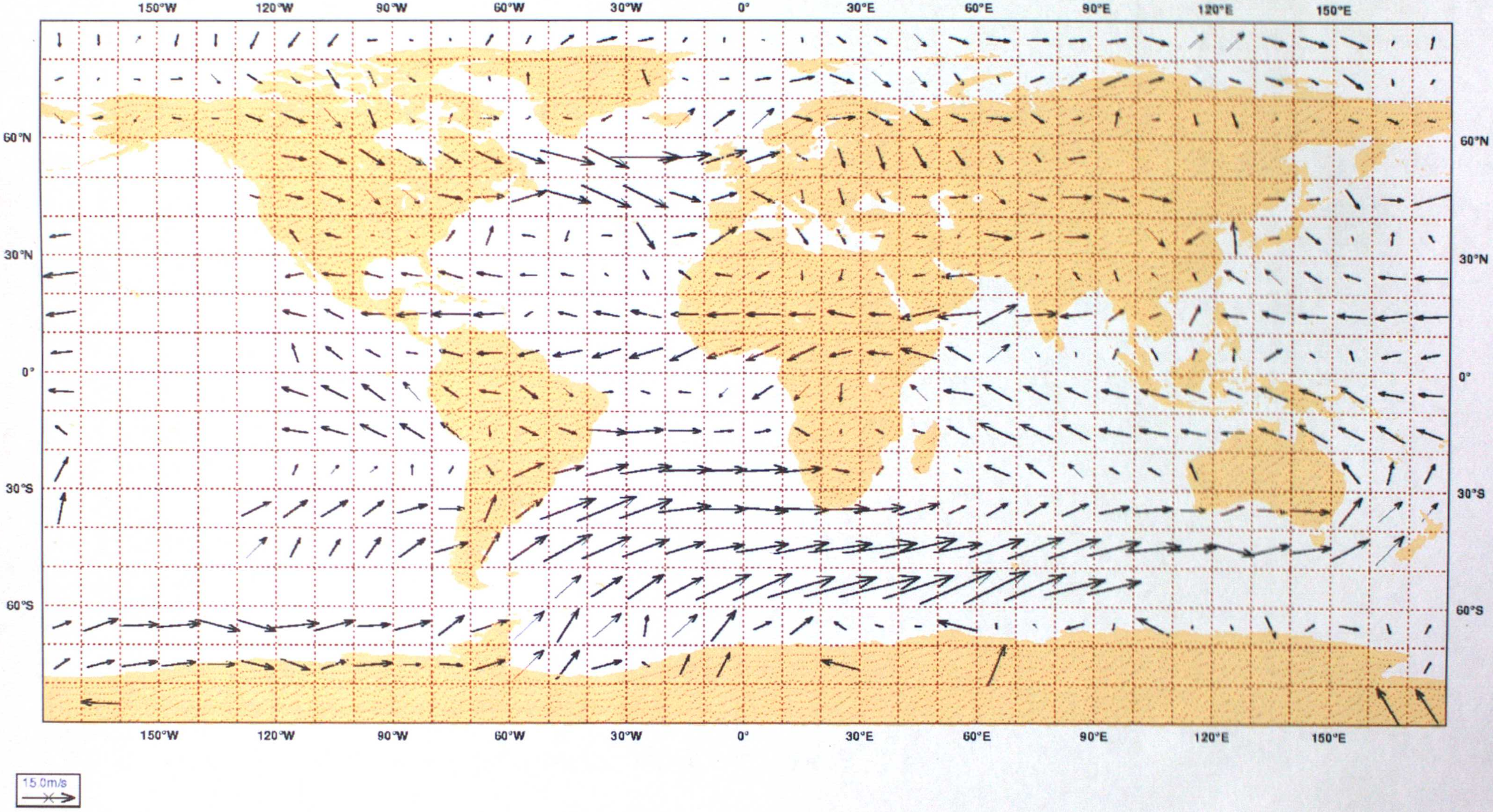
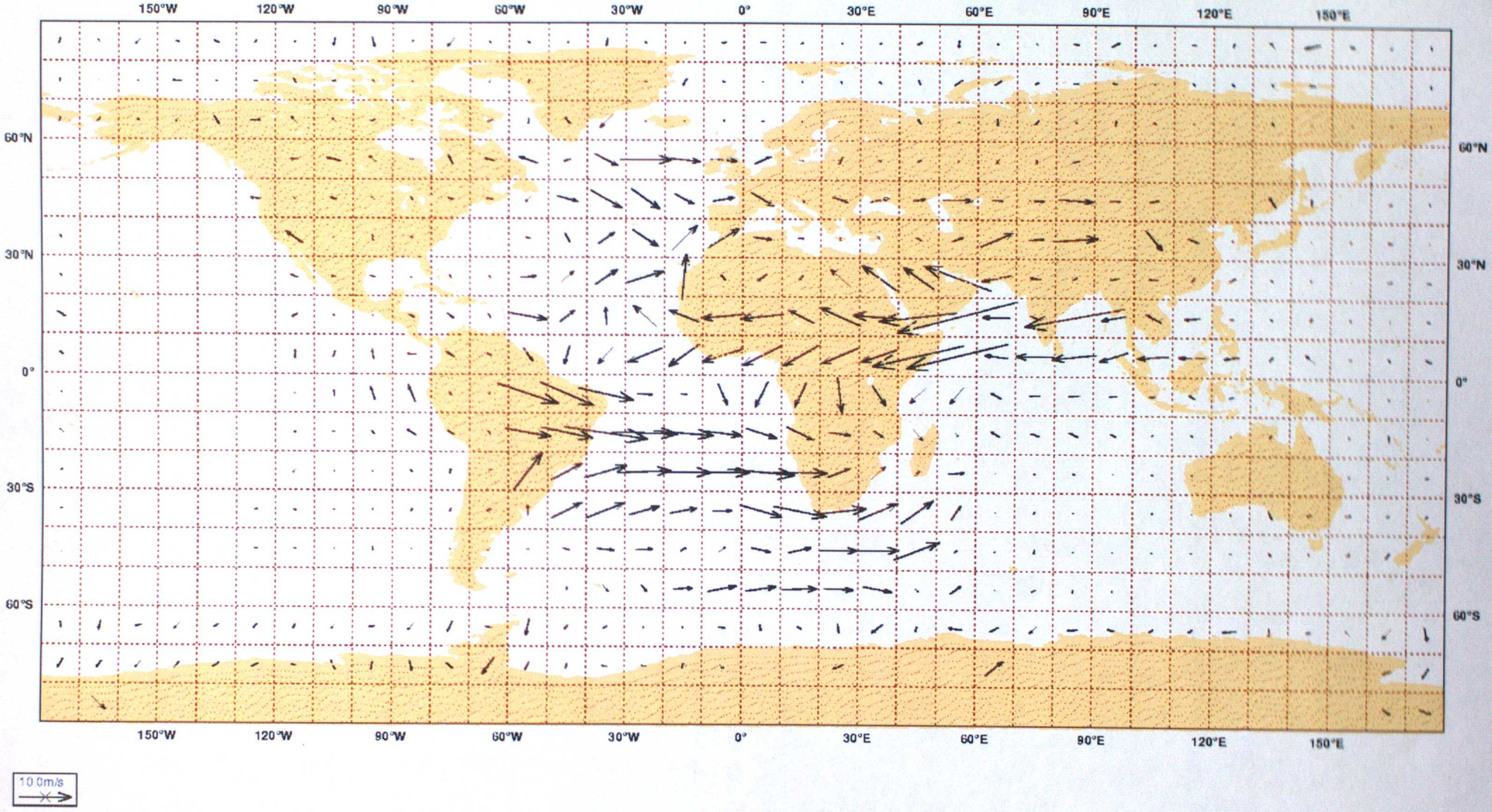

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
15.0m/s

Figure 12. SATOB 701 - 1000 hPa mean vector wind differences. JULY 2006
All observations
Arrows are plotted where greater than 10 obs are present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90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
10.0m/s

Figure 13. SATOB 701 - 1000 hPa mean O-B speed differences (ms-1). JULY 2006

All observations

Values are plotted where greater than 10 obs are present

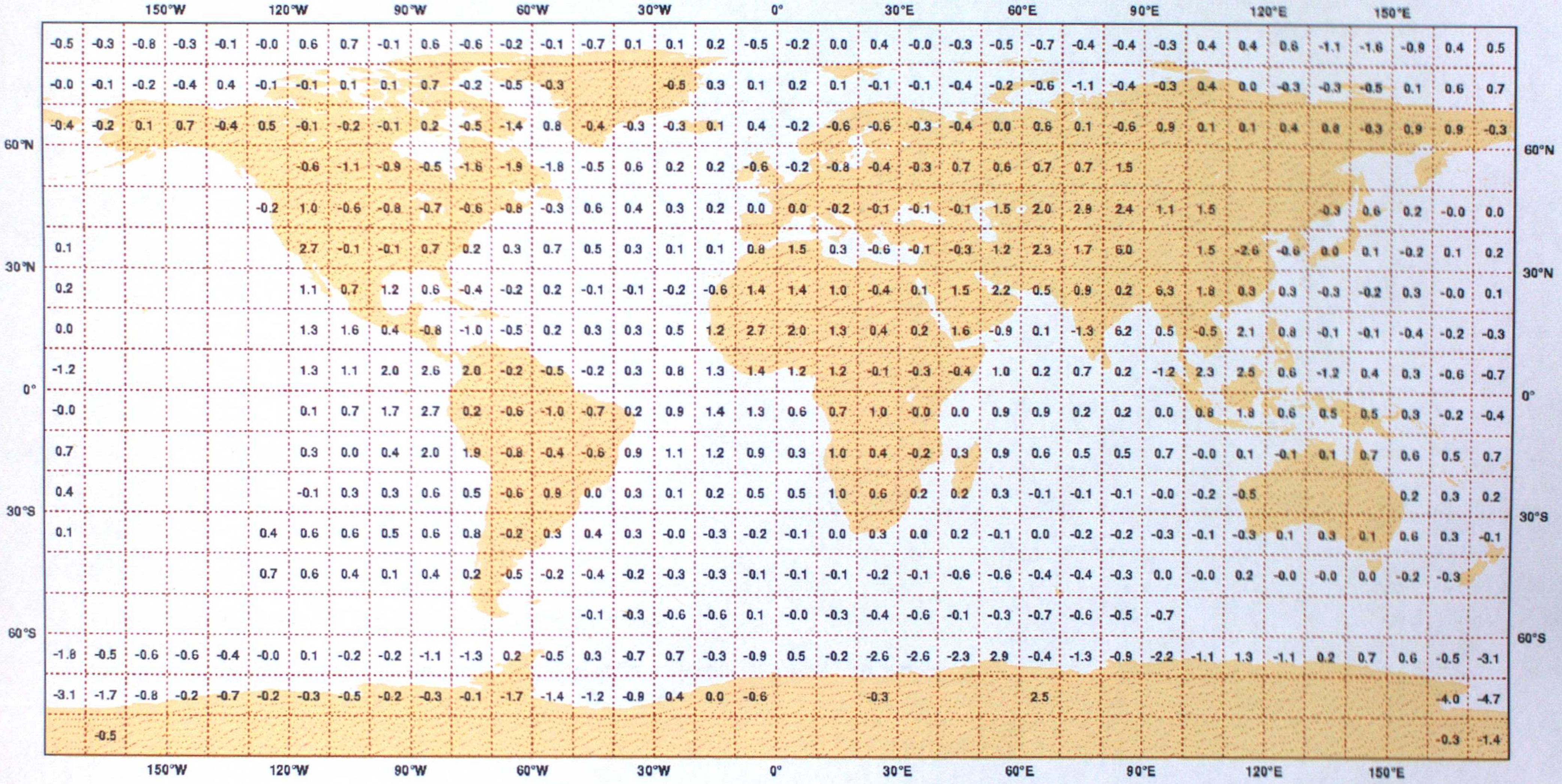
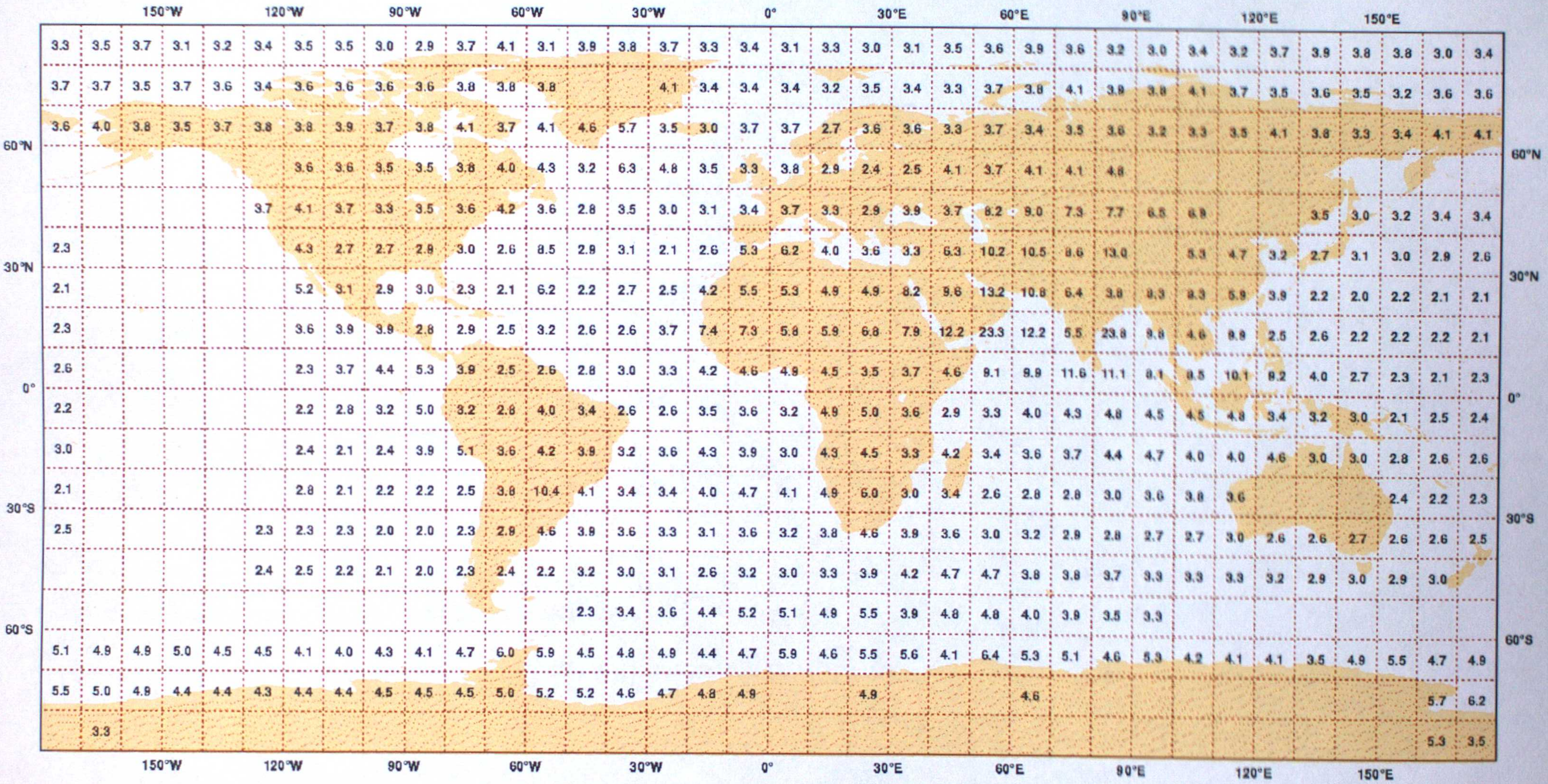
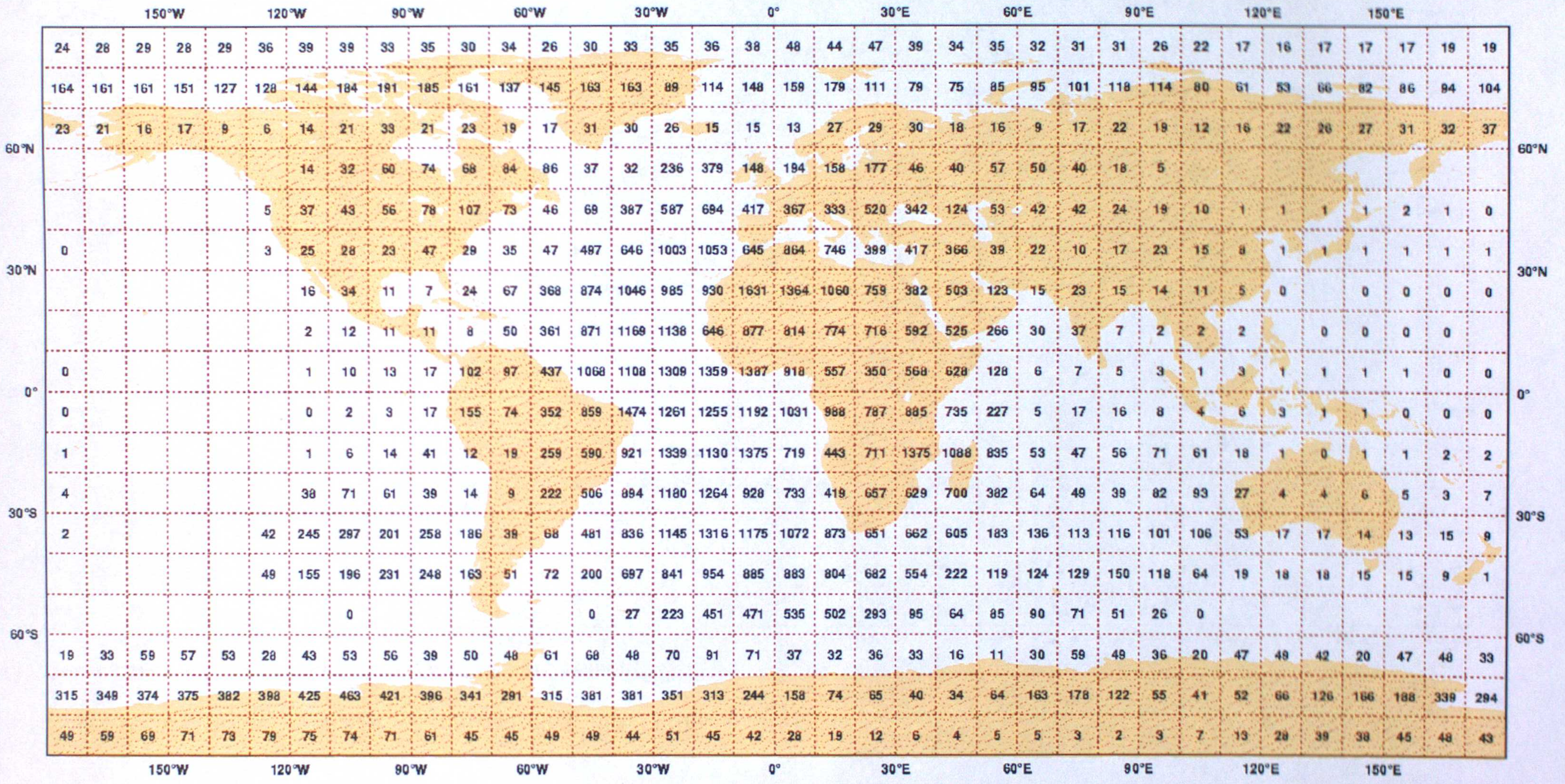

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
-0.5 -0.3 -0.8 -0.3 -0.1 -0.0 0.6 0.7 -0.1 0.6 -0.6 -0.2 -0.1 -0.7 0.1 0.1 0.2 -0.5 -0.2 0.0 0.4 -0.0 -0.3 -0.5 -0.7 -0.4 -0.4 -0.3 0.4 0.4 0.6 -1.1 -1.6 -0.9 0.4 0.5
-0.0 -0.1 -0.2 -0.4 0.4 -0.1 -0.1 0.1 0.1 0.7 -0.2 -0.5 -0.3 -0.5 0.3 0.1 0.2 0.1 -0.1 -0.1 -0.4 -0.2 -0.6 -1.1 -0.4 -0.3 0.4 0.0 -0.3 -0.3 -0.5 0.1 0.6 0.7
-0.4 -0.2 0.1 0.7 -0.4 0.5 -0.1 -0.2 -0.1 0.2 -0.5 -1.4 0.8 -0.4 -0.3 -0.3 0.1 0.4 -0.2 -0.6 -0.6 -0.3 -0.4 0.0 0.6 0.1 -0.6 0.9 0.1 0.1 0.4 0.8 -0.3 0.9 0.9 -0.3
-0.6 -1.1 -0.9 -0.5 -1.6 -1.9 -1.8 -0.5 0.6 0.2 0.2 -0.6 -0.2 -0.8 -0.4 -0.3 0.7 0.6 0.7 0.7 1.5
-0.2 1.0 -0.6 -0.8 -0.7 -0.6 -0.8 -0.3 0.6 0.4 0.3 0.2 0.0 0.0 -0.2 -0.1 -0.1 -0.1 1.5 2.0 2.9 2.4 1.1 1.5 -0.3 0.6 0.2 -0.0 0.0
0.1 2.7 -0.1 -0.1 0.7 0.2 0.3 0.7 0.5 0.3 0.1 0.1 0.8 1.5 0.3 -0.6 -0.1 -0.3 1.2 2.3 1.7 6.0 1.5 -2.6 -0.8 0.0 0.1 -0.2 0.1 0.2
0.2 1.1 0.7 1.2 0.6 -0.4 -0.2 0.2 -0.1 -0.1 -0.2 -0.6 1.4 1.4 1.0 -0.4 0.1 1.5 2.2 0.5 0.9 0.2 6.3 1.8 0.3 0.3 -0.3 -0.2 0.3 -0.0 0.1
0.0 1.3 1.6 0.4 -0.8 -1.0 -0.5 0.2 0.3 0.3 0.5 1.2 2.7 2.0 1.3 0.4 0.2 1.6 -0.9 0.1 -1.3 6.2 0.5 -0.5 2.1 0.8 -0.1 -0.1 -0.4 -0.2 -0.3
-1.2 1.3 1.1 2.0 2.6 2.0 -0.2 -0.5 -0.2 0.3 0.8 1.3 1.4 1.2 1.2 -0.1 -0.3 -0.4 1.0 0.2 0.7 0.2 -1.2 2.3 2.5 0.6 -1.2 0.4 0.3 -0.6 -0.7
-0.0 0.1 0.7 1.7 2.7 0.2 -0.6 -1.0 -0.7 0.2 0.9 1.4 1.3 0.6 0.7 1.0 -0.0 0.0 0.9 0.9 0.2 0.2 0.0 0.8 1.8 0.6 0.5 0.5 0.3 -0.2 -0.4
0.7 0.3 0.0 0.4 2.0 1.9 -0.8 -0.4 -0.6 0.9 1.1 1.2 0.9 0.3 1.0 0.4 -0.2 0.3 0.9 0.6 0.5 0.5 0.7 -0.0 0.1 -0.1 0.1 0.7 0.6 0.5 0.7
0.4 -0.1 0.3 0.3 0.6 0.5 -0.6 0.9 0.0 0.3 0.1 0.2 0.5 0.5 1.0 0.6 0.2 0.2 0.3 -0.1 -0.1 -0.1 -0.0 -0.2 -0.5 0.2 0.3 0.2
0.1 0.4 0.6 0.6 0.5 0.6 0.8 -0.2 0.3 0.4 0.3 -0.0 -0.3 -0.2 -0.1 0.0 0.3 0.0 0.2 -0.1 0.0 -0.2 -0.2 -0.3 -0.1 -0.3 0.1 0.3 0.1 0.6 0.3 -0.1
0.7 0.6 0.4 0.1 0.4 0.2 -0.5 -0.2 -0.4 -0.2 -0.3 -0.3 -0.1 -0.1 -0.1 -0.2 -0.1 -0.6 -0.6 -0.4 -0.4 -0.3 0.0 -0.0 0.2 -0.0 -0.0 0.0 -0.2 -0.3
-0.1 -0.3 -0.6 -0.6 0.1 -0.0 -0.3 -0.4 -0.6 -0.1 -0.3 -0.7 -0.6 -0.5 -0.7
-1.8 -0.5 -0.6 -0.6 -0.4 -0.0 0.1 -0.2 -0.2 -1.1 -1.3 0.2 -0.5 0.3 -0.7 0.7 -0.3 -0.9 0.5 -0.2 -2.6 -2.6 -2.3 2.9 -0.4 -1.3 -0.9 -2.2 -1.1 1.3 -1.1 0.2 0.7 0.6 -0.5 -3.1
-3.1 -1.7 -0.8 -0.2 -0.7 -0.2 -0.3 -0.5 -0.2 -0.3 -0.1 -1.7 -1.4 -1.2 -0.9 0.4 0.0 -0.6 -0.3 2.5 -4.0 -4.7
-0.5 -0.3 -1.4

Figure 14. SATOB 701 - 1000 hPa mean RMS O-B vector differences (ms-1). JULY 2006
All observations
Values are plotted where greater than 10 obs are present



3.3	3.5	3.7	3.1	3.2	3.4	3.5	3.5	3.0	2.9	3.7	4.1	3.1	3.9	3.8	3.7	3.3	3.4	3.1	3.3	3.0	3.1	3.5	3.6	3.9	3.6	3.2	3.0	3.4	3.2	3.7	3.9	3.8	3.8	3.0	3.4
3.7	3.7	3.5	3.7	3.6	3.4	3.6	3.6	3.6	3.6	3.8	3.8	3.8			4.1	3.4	3.4	3.4	3.2	3.5	3.4	3.3	3.7	3.8	4.1	3.9	3.8	4.1	3.7	3.5	3.6	3.5	3.2	3.6	3.6
3.6	4.0	3.8	3.5	3.7	3.8	3.8	3.9	3.7	3.8	4.1	3.7	4.1	4.6	5.7	3.5	3.0	3.7	3.7	2.7	3.6	3.6	3.3	3.7	3.4	3.5	3.6	3.2	3.3	3.5	4.1	3.8	3.3	3.4	4.1	4.1
						3.6	3.6	3.5	3.5	3.8	4.0	4.3	3.2	6.3	4.8	3.5	3.3	3.8	2.9	2.4	2.5	4.1	3.7	4.1	4.1	4.6									
					3.7	4.1	3.7	3.3	3.5	3.6	4.2	3.6	2.8	3.5	3.0	3.1	3.4	3.7	3.3	2.9	3.9	3.7	8.2	9.0	7.3	7.7	6.5	6.9			3.5	3.0	3.2	3.4	3.4
2.3						4.3	2.7	2.7	2.9	3.0	2.6	8.5	2.9	3.1	2.1	2.6	5.3	6.2	4.0	3.6	3.3	6.3	10.2	10.5	8.6	13.0		5.3	4.7	3.2	2.7	3.1	3.0	2.9	2.6
2.1						5.2	3.1	2.9	3.0	2.3	2.1	6.2	2.2	2.7	2.5	4.2	5.5	5.3	4.9	4.9	8.2	9.6	13.2	10.8	6.4	3.8	8.3	8.3	5.9	3.9	2.2	2.0	2.2	2.1	2.1
2.3						3.6	3.9	3.9	2.8	2.9	2.5	3.2	2.6	2.6	3.7	7.4	7.3	5.8	5.9	6.8	7.9	12.2	23.3	12.2	5.5	23.8	9.6	4.6	8.9	2.5	2.6	2.2	2.2	2.2	2.1
2.6						2.3	3.7	4.4	5.3	3.9	2.5	2.6	2.8	3.0	3.3	4.2	4.6	4.8	4.5	3.5	3.7	4.6	9.1	9.9	11.6	11.1	8.1	8.5	10.1	9.2	4.0	2.7	2.3	2.1	2.3
2.2						2.2	2.8	3.2	5.0	3.2	2.8	4.0	3.4	2.6	2.6	3.5	3.6	3.2	4.9	5.0	3.6	2.9	3.3	4.0	4.3	4.8	4.5	4.5	4.8	3.4	3.2	3.0	2.1	2.5	2.4
3.0						2.4	2.1	2.4	3.9	5.1	3.6	4.2	3.9	3.2	3.6	4.3	3.9	3.0	4.3	4.5	3.3	4.2	3.4	3.6	3.7	4.4	4.7	4.0	4.0	4.6	3.0	3.0	2.8	2.6	2.6
2.1						2.8	2.1	2.2	2.2	2.5	3.8	10.4	4.1	3.4	3.4	4.0	4.7	4.1	4.9	6.0	3.0	3.4	2.6	2.8	2.8	3.0	3.6	3.8	3.6				2.4	2.2	2.3
2.5					2.3	2.3	2.3	2.0	2.0	2.3	2.9	4.6	3.9	3.6	3.3	3.1	3.6	3.2	3.8	4.6	3.9	3.6	3.0	3.2	2.9	2.8	2.7	2.7	3.0	2.6	2.6	2.7	2.6	2.6	2.5
					2.4	2.5	2.2	2.1	2.0	2.3	2.4	2.2	3.2	3.0	3.1	2.6	3.2	3.0	3.3	3.9	4.2	4.7	4.7	3.8	3.8	3.7	3.3	3.3	3.3	3.2	2.9	3.0	2.9	3.0	
													2.3	3.4	3.6	4.4	5.2	5.1	4.9	5.5	3.9	4.8	4.8	4.0	3.9	3.5	3.3								
5.1	4.9	4.9	5.0	4.5	4.5	4.1	4.0	4.3	4.1	4.7	6.0	5.9	4.5	4.8	4.9	4.4	4.7	5.9	4.6	5.5	5.6	4.1	6.4	5.3	5.1	4.6	5.3	4.2	4.1	4.1	3.5	4.9	5.5	4.7	4.9
5.5	5.0	4.9	4.4	4.4	4.3	4.4	4.4	4.5	4.5	4.5	5.0	5.2	5.2	4.6	4.7	4.8	4.9			4.9				4.6										5.7	6.2
	3.3																																	5.3	3.5

Figure 15. SATOB 401 - 700 hPa mean daily count. JULY 2006
Global average number of observations in 24 hours = 115248



24	28	29	28	29	36	39	39	33	35	30	34	26	30	33	35	36	38	48	44	47	39	34	35	32	31	31	26	22	17	16	17	17	17	19	19
164	161	161	151	127	128	144	184	191	185	161	137	145	163	163	89	114	148	159	179	111	79	75	85	95	101	118	114	80	61	53	66	82	86	94	104
23	21	16	17	9	6	14	21	33	21	23	19	17	31	30	26	15	15	13	27	29	30	18	16	9	17	22	19	12	16	22	26	27	31	32	37
						14	32	60	74	68	84	86	37	32	236	379	148	194	158	177	46	40	57	50	40	18	5								
					5	37	43	56	78	107	73	46	69	387	587	694	417	367	333	520	342	124	53	42	42	24	19	10	1	1	1	1	2	1	0
0					3	25	28	23	47	29	35	47	487	646	1003	1053	645	864	746	399	417	366	39	22	10	17	23	15	8	1	1	1	1	1	1
						16	34	11	7	24	67	368	874	1046	985	930	1631	1364	1060	759	382	503	123	15	23	15	14	11	5	0		0	0	0	0
						2	12	11	11	8	50	361	871	1169	1138	646	877	814	774	716	592	525	266	30	37	7	2	2	2		0	0	0	0	
0						1	10	13	17	102	97	437	1068	1108	1309	1359	1387	918	557	350	568	628	128	6	7	5	3	1	3	1	1	1	1	0	0
0						0	2	3	17	155	74	352	859	1474	1261	1255	1192	1031	988	787	885	735	227	5	17	16	8	4	6	3	1	1	0	0	0
1						1	6	14	41	12	19	259	590	921	1339	1130	1375	719	443	711	1375	1088	835	53	47	56	71	61	18	1	0	1	1	2	2
4						38	71	61	39	14	9	222	506	894	1180	1264	928	733	419	657	629	700	382	64	49	39	82	93	27	4	4	6	5	3	7
2					42	245	297	201	258	186	39	68	481	836	1145	1316	1175	1072	873	651	662	605	183	136	113	116	101	106	53	17	17	14	13	15	9
					49	155	196	231	248	163	51	72	200	697	841	954	885	883	804	682	554	222	119	124	129	150	118	64	19	18	18	15	15	9	1
							0						0	27	223	451	471	535	502	293	95	64	85	90	71	51	26	0							
19	33	59	57	53	28	43	53	56	39	50	48	61	68	48	70	91	71	37	32	36	33	16	11	30	59	49	36	20	47	49	42	20	47	48	33
315	349	374	375	382	398	425	463	421	396	341	291	315	381	381	351	313	244	158	74	65	40	34	64	163	178	122	55	41	52	66	126	166	188	339	294
49	59	69	71	73	79	75	74	71	61	45	45	49	49	44	51	45	42	28	19	12	6	4	5	5	3	2	3	7	13	28	39	38	45	48	43

Figure 16. SATOB 401 - 700 hPa vector mean wind. JULY 2006
All observations
Arrows are plotted where greater than 10 obs are present

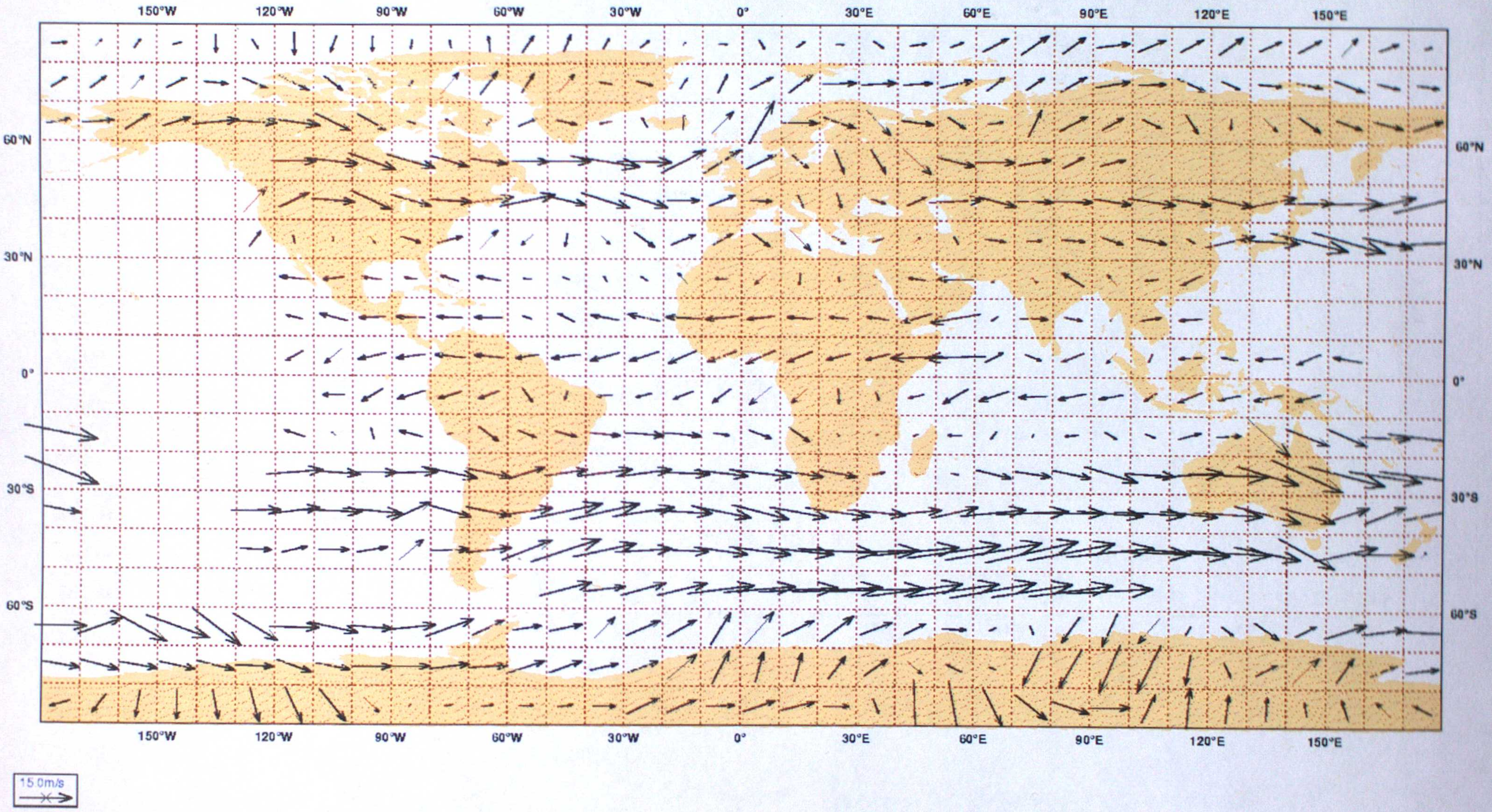

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
15.0m/s

Figure 17. SATOB 401 - 700 hPa mean vector wind differences. JULY 2006
All observations
Arrows are plotted where greater than 10 obs are present

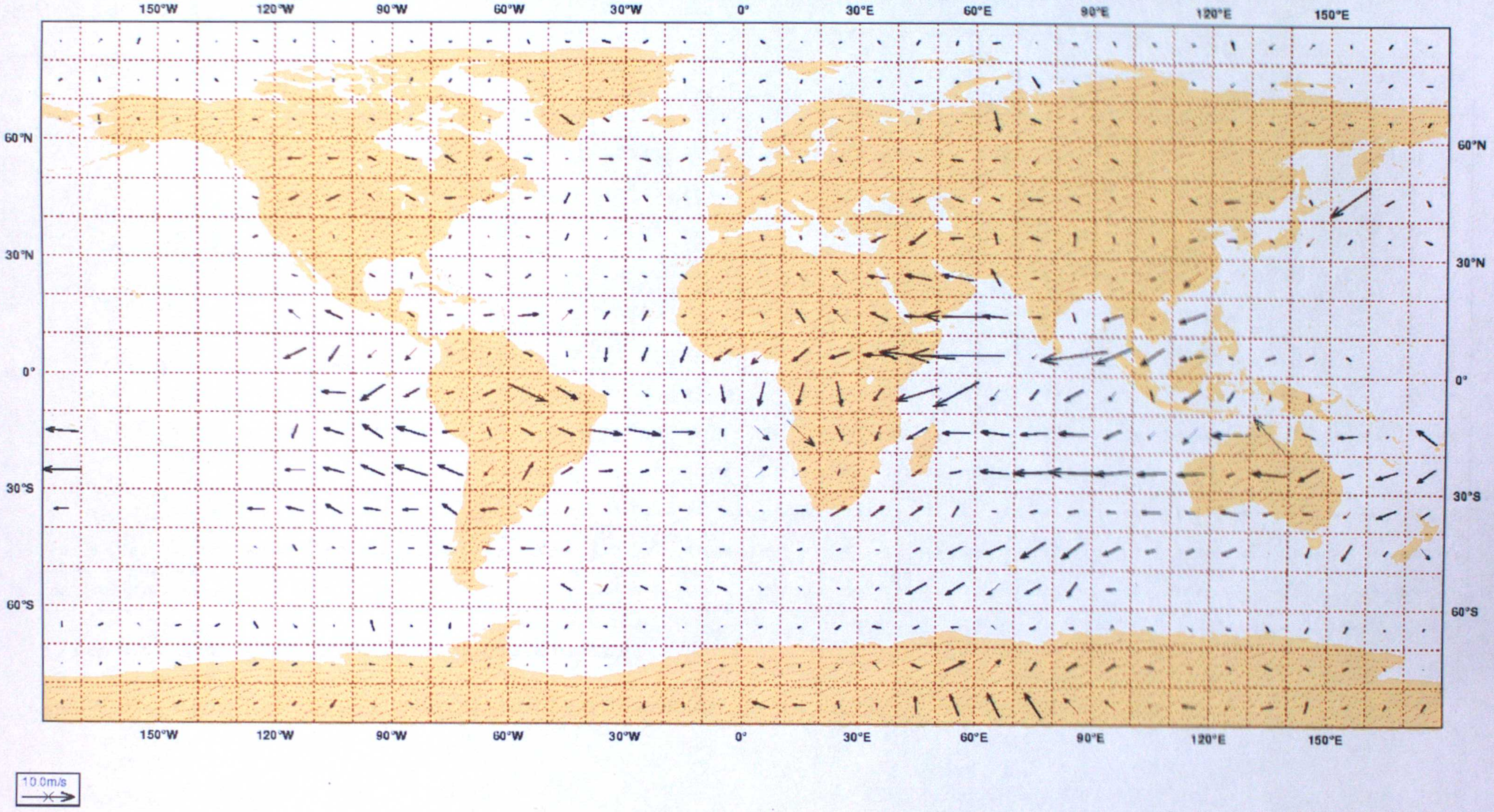
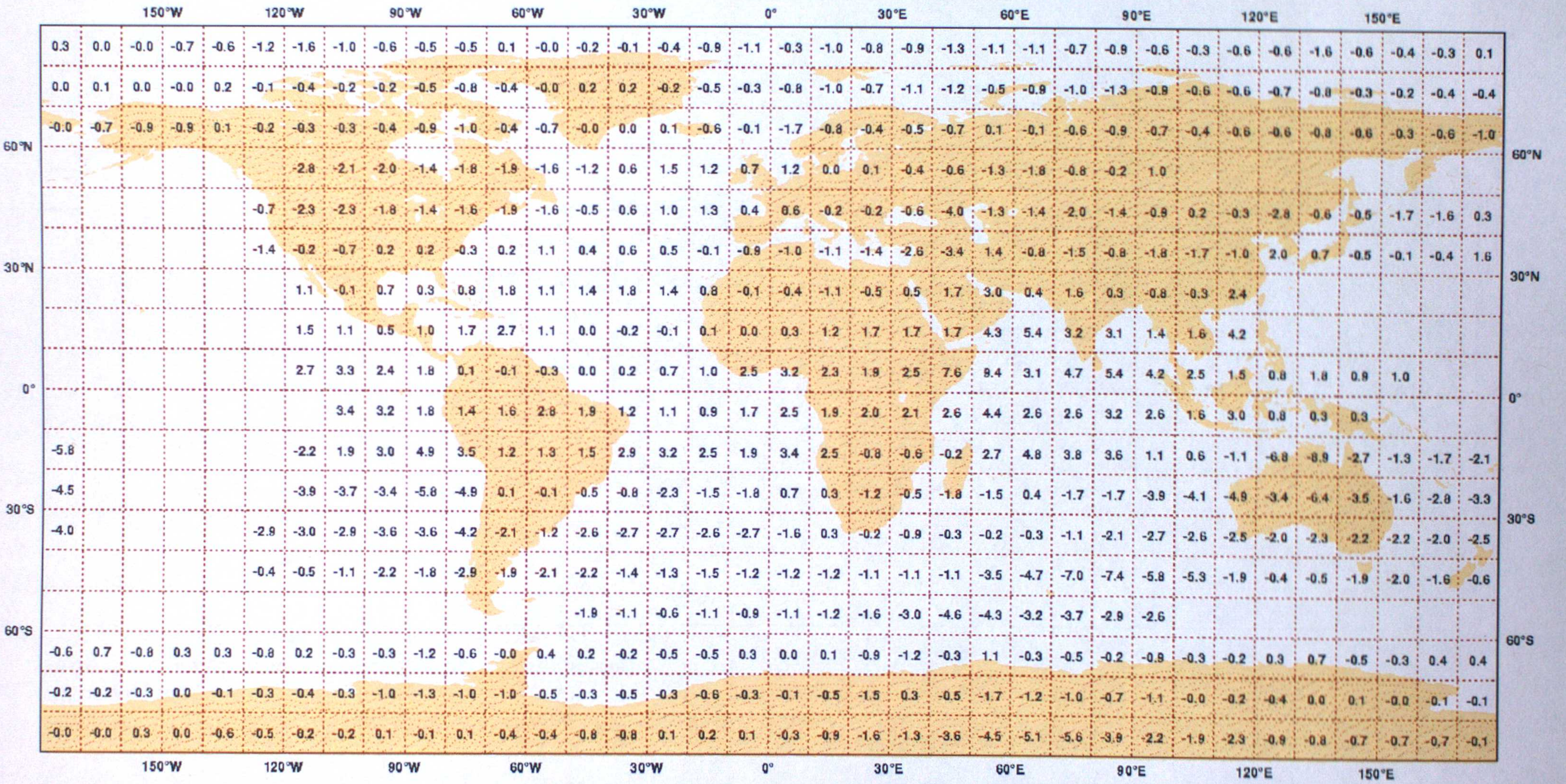
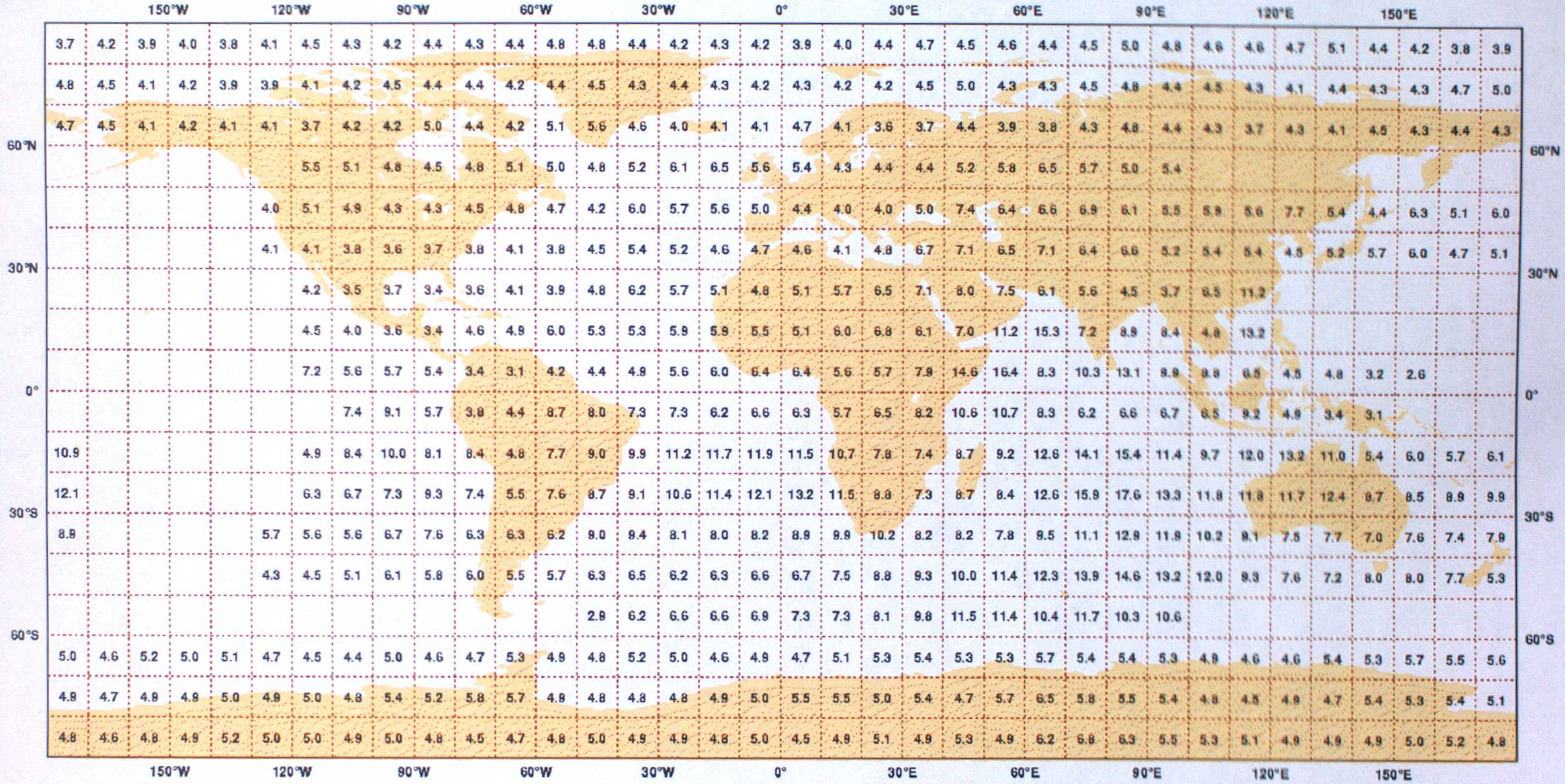

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
10.0m/s

Figure 18. SATOB 401 - 700 hPa mean O-B speed differences (ms-1). JULY 2006
All observations
Values are plotted where greater than 10 obs are present



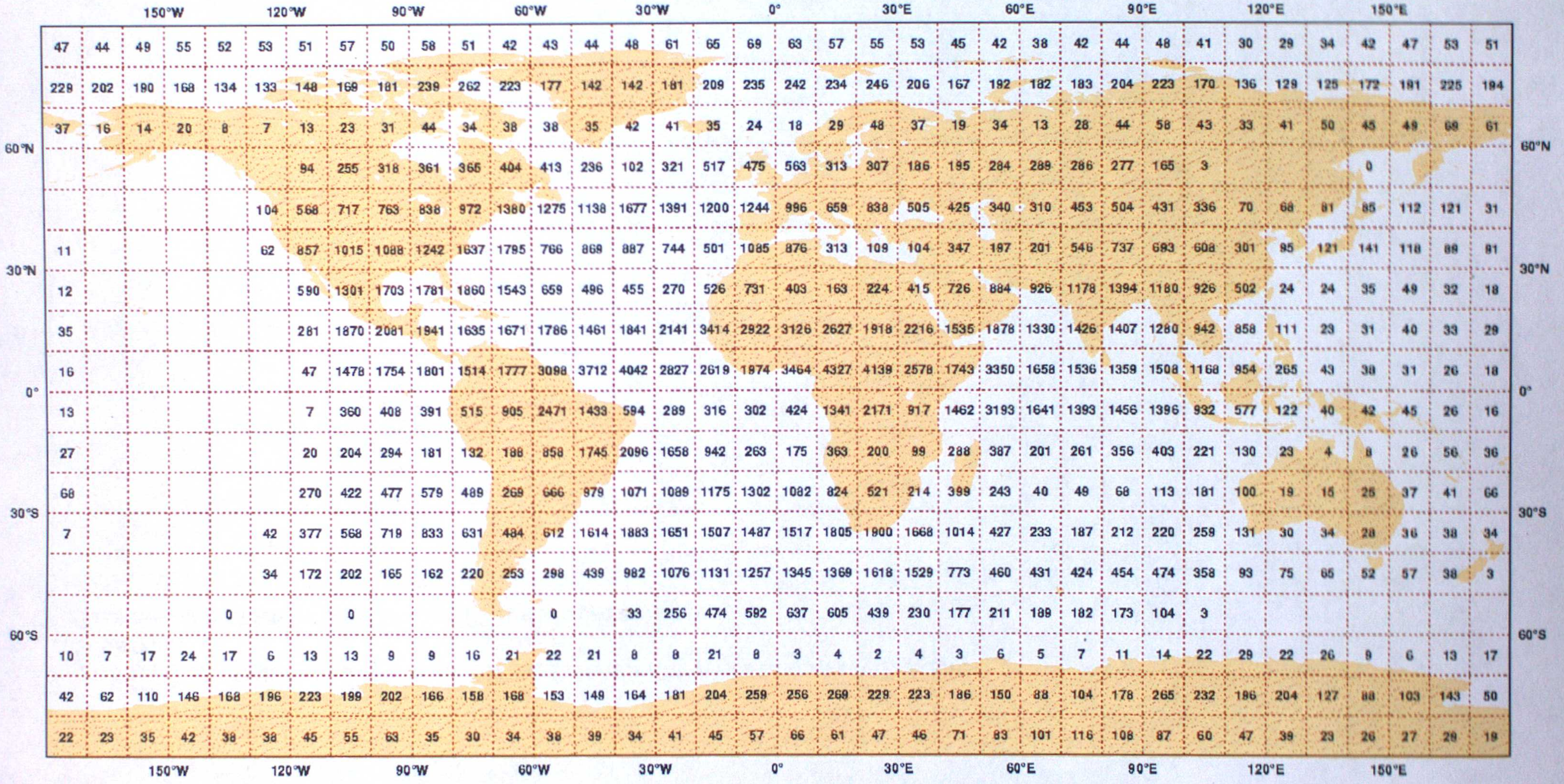
0.3	0.0	-0.0	-0.7	-0.6	-1.2	-1.6	-1.0	-0.6	-0.5	-0.5	0.1	-0.0	-0.2	-0.1	-0.4	-0.9	-1.1	-0.3	-1.0	-0.8	-0.9	-1.3	-1.1	-1.1	-0.7	-0.9	-0.6	-0.3	-0.6	-0.6	-1.6	-0.6	-0.4	-0.3	0.1
0.0	0.1	0.0	-0.0	0.2	-0.1	-0.4	-0.2	-0.2	-0.5	-0.8	-0.4	-0.0	0.2	0.2	-0.2	-0.5	-0.3	-0.8	-1.0	-0.7	-1.1	-1.2	-0.5	-0.9	-1.0	-1.3	-0.9	-0.6	-0.6	-0.7	-0.8	-0.3	-0.2	-0.4	-0.4
-0.0	-0.7	-0.9	-0.9	0.1	-0.2	-0.3	-0.3	-0.4	-0.9	-1.0	-0.4	-0.7	-0.0	0.0	0.1	-0.6	-0.1	-1.7	-0.8	-0.4	-0.5	-0.7	0.1	-0.1	-0.6	-0.9	-0.7	-0.4	-0.6	-0.6	-0.8	-0.6	-0.3	-0.6	-1.0
						-2.8	-2.1	-2.0	-1.4	-1.8	-1.9	-1.6	-1.2	0.6	1.5	1.2	0.7	1.2	0.0	0.1	-0.4	-0.6	-1.3	-1.8	-0.8	-0.2	1.0								
					-0.7	-2.3	-2.3	-1.8	-1.4	-1.6	-1.9	-1.6	-0.5	0.6	1.0	1.3	0.4	0.6	-0.2	-0.2	-0.6	-4.0	-1.3	-1.4	-2.0	-1.4	-0.9	0.2	-0.3	-2.8	-0.6	-0.5	-1.7	-1.6	0.3
					-1.4	-0.2	-0.7	0.2	0.2	-0.3	0.2	1.1	0.4	0.6	0.5	-0.1	-0.9	-1.0	-1.1	-1.4	-2.6	-3.4	1.4	-0.8	-1.5	-0.8	-1.8	-1.7	-1.0	2.0	0.7	-0.5	-0.1	-0.4	1.6
						1.1	-0.1	0.7	0.3	0.8	1.8	1.1	1.4	1.8	1.4	0.8	-0.1	-0.4	-1.1	-0.5	0.5	1.7	3.0	0.4	1.6	0.3	-0.8	-0.3	2.4						
						1.5	1.1	0.5	1.0	1.7	2.7	1.1	0.0	-0.2	-0.1	0.1	0.0	0.3	1.2	1.7	1.7	1.7	4.3	5.4	3.2	3.1	1.4	1.6	4.2						
						2.7	3.3	2.4	1.8	0.1	-0.1	-0.3	0.0	0.2	0.7	1.0	2.5	3.2	2.3	1.9	2.5	7.6	9.4	3.1	4.7	5.4	4.2	2.5	1.5	0.8	1.8	0.8	1.0		
							3.4	3.2	1.8	1.4	1.6	2.8	1.9	1.2	1.1	0.9	1.7	2.5	1.9	2.0	2.1	2.6	4.4	2.6	2.6	3.2	2.6	1.6	3.0	0.8	0.3	0.3			
-5.8						-2.2	1.9	3.0	4.9	3.5	1.2	1.3	1.5	2.9	3.2	2.5	1.9	3.4	2.5	-0.8	-0.6	-0.2	2.7	4.8	3.8	3.6	1.1	0.6	-1.1	-6.8	-8.9	-2.7	-1.3	-1.7	-2.1
-4.5						-3.9	-3.7	-3.4	-5.8	-4.9	0.1	-0.1	-0.5	-0.8	-2.3	-1.5	-1.8	0.7	0.3	-1.2	-0.5	-1.8	-1.5	0.4	-1.7	-1.7	-3.9	-4.1	-4.9	-3.4	-6.4	-3.5	-1.6	-2.8	-3.3
-4.0					-2.9	-3.0	-2.9	-3.6	-3.6	-4.2	-2.1	-1.2	-2.6	-2.7	-2.7	-2.6	-2.7	-1.6	0.3	-0.2	-0.9	-0.3	-0.2	-0.3	-1.1	-2.1	-2.7	-2.6	-2.5	-2.0	-2.3	-2.2	-2.2	-2.0	-2.5
					-0.4	-0.5	-1.1	-2.2	-1.8	-2.9	-1.9	-2.1	-2.2	-1.4	-1.3	-1.5	-1.2	-1.2	-1.2	-1.1	-1.1	-1.1	-3.5	-4.7	-7.0	-7.4	-5.8	-5.3	-1.9	-0.4	-0.5	-1.9	-2.0	-1.6	-0.6
													-1.9	-1.1	-0.6	-1.1	-0.9	-1.1	-1.2	-1.6	-3.0	-4.6	-4.3	-3.2	-3.7	-2.9	-2.6								
-0.6	0.7	-0.8	0.3	0.3	-0.8	0.2	-0.3	-0.3	-1.2	-0.6	-0.0	0.4	0.2	-0.2	-0.5	-0.5	0.3	0.0	0.1	-0.9	-1.2	-0.3	1.1	-0.3	-0.5	-0.2	-0.9	-0.3	-0.2	0.3	0.7	-0.5	-0.3	0.4	0.4
-0.2	-0.2	-0.3	0.0	-0.1	-0.3	-0.4	-0.3	-1.0	-1.3	-1.0	-1.0	-0.5	-0.3	-0.5	-0.3	-0.6	-0.3	-0.1	-0.5	-1.5	0.3	-0.5	-1.7	-1.2	-1.0	-0.7	-1.1	-0.0	-0.2	-0.4	0.0	0.1	-0.0	-0.1	-0.1
-0.0	-0.0	0.3	0.0	-0.6	-0.5	-0.2	-0.2	0.1	-0.1	0.1	-0.4	-0.4	-0.8	-0.8	0.1	0.2	0.1	-0.3	-0.9	-1.6	-1.3	-3.6	-4.5	-5.1	-5.6	-3.9	-2.2	-1.9	-2.3	-0.9	-0.8	-0.7	-0.7	-0.7	-0.1

Figure 19. SATOB 401 - 700 hPa mean RMS O-B vector differences (ms-1). JULY 2006
All observations
Values are plotted where greater than 10 obs are present



3.7	4.2	3.9	4.0	3.8	4.1	4.5	4.3	4.2	4.4	4.3	4.4	4.8	4.8	4.4	4.2	4.3	4.2	3.9	4.0	4.4	4.7	4.5	4.6	4.4	4.5	5.0	4.8	4.6	4.6	4.7	5.1	4.4	4.2	3.8	3.9
4.8	4.5	4.1	4.2	3.9	3.9	4.1	4.2	4.5	4.4	4.4	4.2	4.4	4.5	4.3	4.4	4.3	4.2	4.3	4.2	4.2	4.5	5.0	4.3	4.3	4.5	4.8	4.4	4.5	4.3	4.1	4.4	4.3	4.3	4.7	5.0
4.7	4.5	4.1	4.2	4.1	4.1	3.7	4.2	4.2	5.0	4.4	4.2	5.1	5.6	4.6	4.0	4.1	4.1	4.7	4.1	3.6	3.7	4.4	3.9	3.8	4.3	4.8	4.4	4.3	3.7	4.3	4.1	4.5	4.3	4.4	4.3
						5.5	5.1	4.8	4.5	4.8	5.1	5.0	4.8	5.2	6.1	6.5	5.6	5.4	4.3	4.4	4.4	5.2	5.8	6.5	5.7	5.0	5.4								
					4.0	5.1	4.9	4.3	4.3	4.5	4.8	4.7	4.2	6.0	5.7	5.6	5.0	4.4	4.0	4.0	5.0	7.4	6.4	6.6	6.9	6.1	5.5	5.9	5.6	7.7	5.4	4.4	6.3	5.1	6.0
					4.1	4.1	3.8	3.6	3.7	3.8	4.1	3.8	4.5	5.4	5.2	4.6	4.7	4.6	4.1	4.8	6.7	7.1	6.5	7.1	6.4	6.6	5.2	5.4	5.4	4.5	5.2	5.7	6.0	4.7	5.1
						4.2	3.5	3.7	3.4	3.6	4.1	3.9	4.8	6.2	5.7	5.1	4.8	5.1	5.7	6.5	7.1	8.0	7.5	6.1	5.6	4.5	3.7	6.5	11.2						
						4.5	4.0	3.6	3.4	4.6	4.9	6.0	5.3	5.3	5.9	5.9	5.5	5.1	6.0	6.8	6.1	7.0	11.2	15.3	7.2	8.9	8.4	4.8	13.2						
						7.2	5.6	5.7	5.4	3.4	3.1	4.2	4.4	4.9	5.6	6.0	6.4	6.4	5.6	5.7	7.9	14.6	16.4	8.3	10.3	13.1	8.9	8.8	6.5	4.5	4.8	3.2	2.6		
							7.4	9.1	5.7	3.8	4.4	8.7	8.0	7.3	7.3	6.2	6.6	6.3	5.7	6.5	8.2	10.6	10.7	8.3	6.2	6.6	6.7	6.5	9.2	4.9	3.4	3.1			
10.9						4.9	8.4	10.0	8.1	8.4	4.8	7.7	9.0	9.9	11.2	11.7	11.9	11.5	10.7	7.8	7.4	8.7	9.2	12.6	14.1	15.4	11.4	9.7	12.0	13.2	11.0	5.4	6.0	5.7	6.1
12.1						6.3	6.7	7.3	9.3	7.4	5.5	7.6	8.7	9.1	10.6	11.4	12.1	13.2	11.5	8.8	7.3	8.7	8.4	12.6	15.9	17.6	13.3	11.8	11.8	11.7	12.4	8.7	8.5	8.9	9.9
8.8					5.7	5.6	5.6	6.7	7.6	6.3	6.3	6.2	9.0	9.4	8.1	8.0	8.2	8.9	9.9	10.2	8.2	8.2	7.8	9.5	11.1	12.9	11.9	10.2	9.1	7.5	7.7	7.0	7.6	7.4	7.9
					4.3	4.5	5.1	6.1	5.8	6.0	5.5	5.7	6.3	6.5	6.2	6.3	6.6	6.7	7.5	8.8	9.3	10.0	11.4	12.3	13.9	14.6	13.2	12.0	9.3	7.6	7.2	8.0	8.0	7.7	5.3
													2.9	6.2	6.6	6.6	6.9	7.3	7.3	8.1	9.8	11.5	11.4	10.4	11.7	10.3	10.6								
5.0	4.6	5.2	5.0	5.1	4.7	4.5	4.4	5.0	4.6	4.7	5.3	4.9	4.8	5.2	5.0	4.6	4.9	4.7	5.1	5.3	5.4	5.3	5.3	5.7	5.4	5.4	5.3	4.8	4.6	4.6	5.4	5.3	5.7	5.5	5.6
4.8	4.7	4.8	4.9	5.0	4.9	5.0	4.8	5.4	5.2	5.8	5.7	4.9	4.8	4.8	4.8	4.9	5.0	5.5	5.5	5.0	5.4	4.7	5.7	6.5	5.8	5.5	5.4	4.8	4.5	4.9	4.7	5.4	5.3	5.4	5.1
4.8	4.6	4.8	4.9	5.2	5.0	5.0	4.9	5.0	4.8	4.5	4.7	4.8	5.0	4.9	4.9	4.8	5.0	4.5	4.9	5.1	4.9	5.3	4.9	6.2	6.8	6.3	5.5	5.3	5.1	4.8	4.9	4.9	5.0	5.2	4.8

Figure 20. SATOB 101 - 400 hPa mean daily count. JULY 2006
Global average number of observations In 24 hours = 274849



47	44	49	55	52	53	51	57	50	58	51	42	43	44	48	61	65	69	63	57	55	53	45	42	38	42	44	48	41	30	29	34	42	47	53	51
228	202	190	168	134	133	148	169	181	239	262	223	177	142	142	181	209	235	242	234	246	206	167	192	182	183	204	223	170	136	129	125	172	191	225	194
37	16	14	20	8	7	13	23	31	44	34	38	38	35	42	41	35	24	18	29	48	37	19	34	13	28	44	58	43	33	41	50	45	49	69	61
						94	255	318	361	365	404	413	236	102	321	517	475	563	313	307	186	195	284	289	286	277	165	3				0			
					104	568	717	763	838	972	1380	1275	1138	1677	1391	1200	1244	996	659	838	505	425	340	310	453	504	431	336	70	68	81	85	112	121	31
11					62	857	1015	1088	1242	1637	1795	766	869	887	744	501	1085	876	313	109	104	347	187	201	546	737	683	608	301	95	121	141	118	89	81
12						590	1301	1703	1781	1860	1543	659	496	455	270	526	731	403	163	224	415	726	884	926	1178	1394	1180	926	502	24	24	35	49	32	18
35						281	1870	2081	1941	1635	1671	1786	1461	1841	2141	3414	2922	3126	2627	1918	2216	1535	1878	1330	1426	1407	1280	942	858	111	23	31	40	33	29
16						47	1478	1754	1801	1514	1777	3098	3712	4042	2827	2619	1974	3464	4327	4139	2578	1743	3350	1658	1536	1359	1508	1168	954	265	43	38	31	26	18
13						7	360	408	391	515	905	2471	1433	594	289	316	302	424	1341	2171	917	1462	3193	1641	1393	1456	1396	932	577	122	40	42	45	26	16
27						20	204	294	181	132	188	858	1745	2096	1658	942	263	175	363	200	99	288	387	201	261	356	403	221	130	23	4	8	26	56	36
68						270	422	477	579	489	269	666	979	1071	1089	1175	1302	1082	824	521	214	399	243	40	49	68	113	181	100	19	15	25	37	41	66
7					42	377	568	719	833	631	484	612	1614	1883	1651	1507	1487	1517	1805	1900	1668	1014	427	233	187	212	220	259	131	30	34	28	36	38	34
					34	172	202	165	162	220	253	298	439	982	1076	1131	1257	1345	1369	1618	1529	773	460	431	424	454	474	358	93	75	65	52	57	38	3
				0			0					0		33	256	474	592	637	605	439	230	177	211	189	182	173	104	3							
10	7	17	24	17	6	13	13	9	9	16	21	22	21	8	8	21	8	3	4	2	4	3	6	5	7	11	14	22	29	22	26	9	6	13	17
42	62	110	146	168	196	223	199	202	166	158	168	153	149	164	181	204	259	256	269	229	223	186	150	88	104	178	265	232	196	204	127	88	103	143	50
22	23	35	42	38	38	45	55	63	35	30	34	38	39	34	41	45	57	66	61	47	46	71	83	101	116	108	87	60	47	39	23	26	27	29	19

Figure 21. SATOB 101 - 400 hPa vector mean wind. JULY 2006
All observations
Arrows are plotted where greater than 10 obs are present

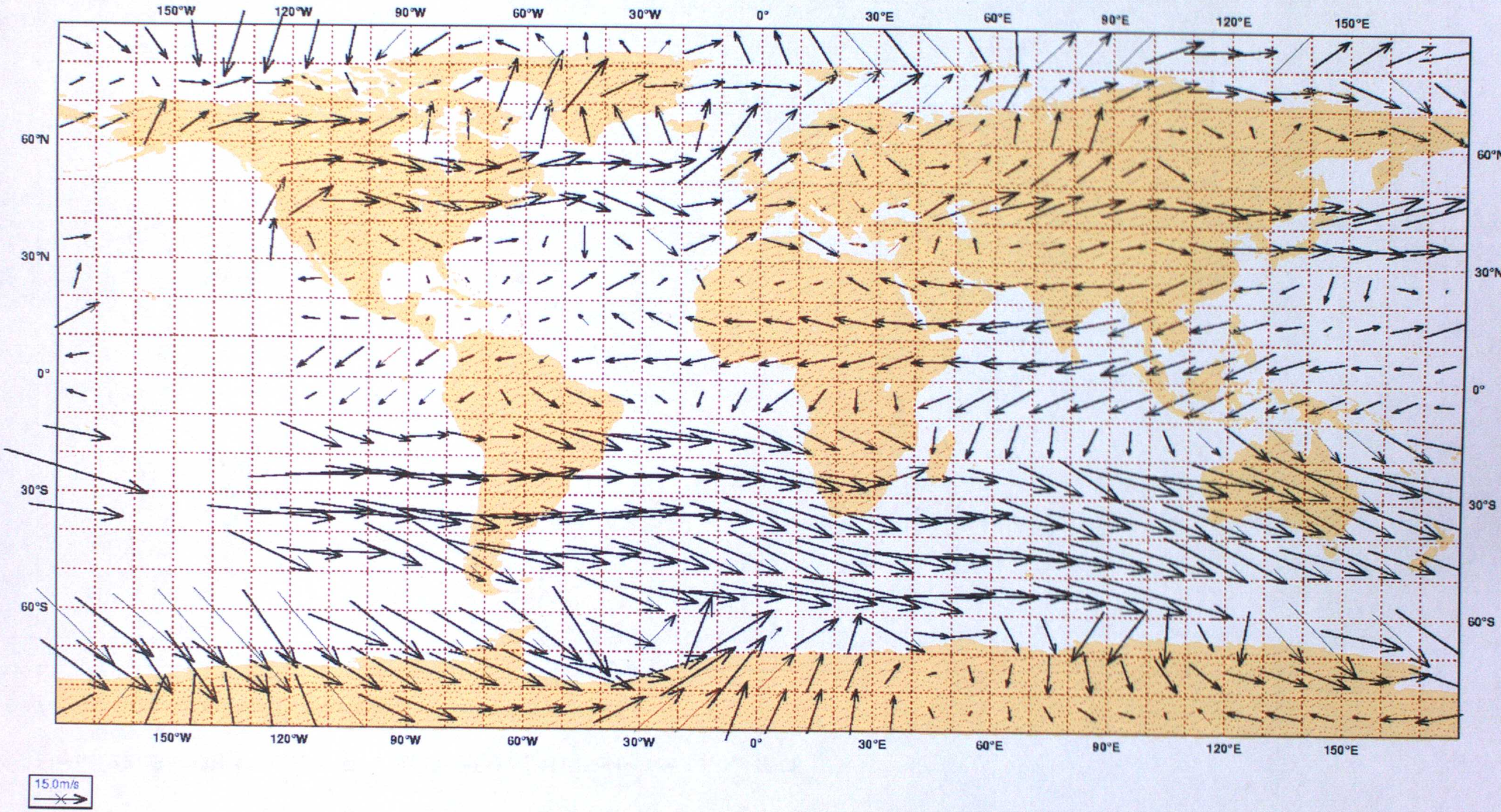

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
15.0m/s

Figure 22. SATOB 101 - 400 hPa mean vector wind differences. JULY 2006
All observations
Arrows are plotted where greater than 10 obs are present

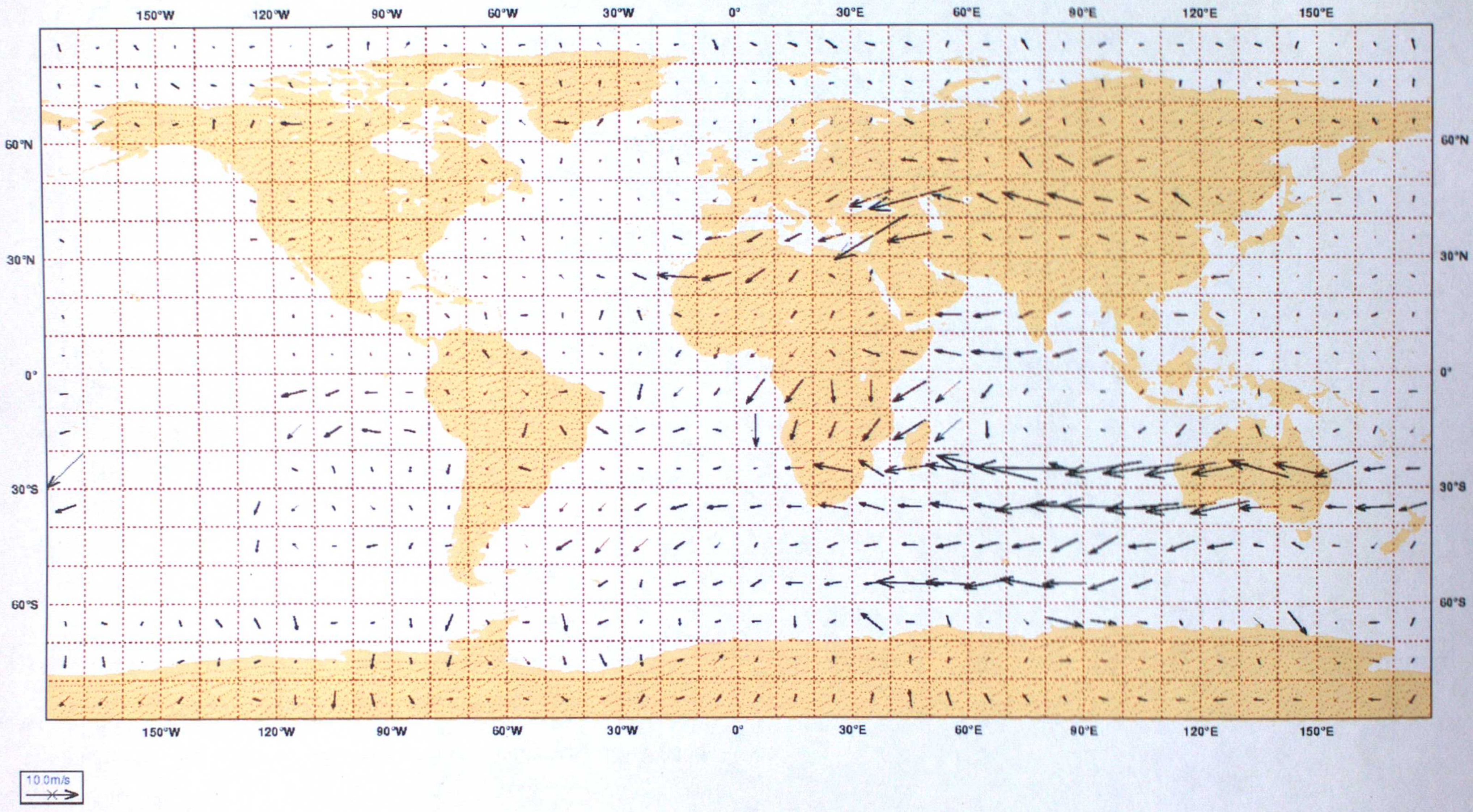
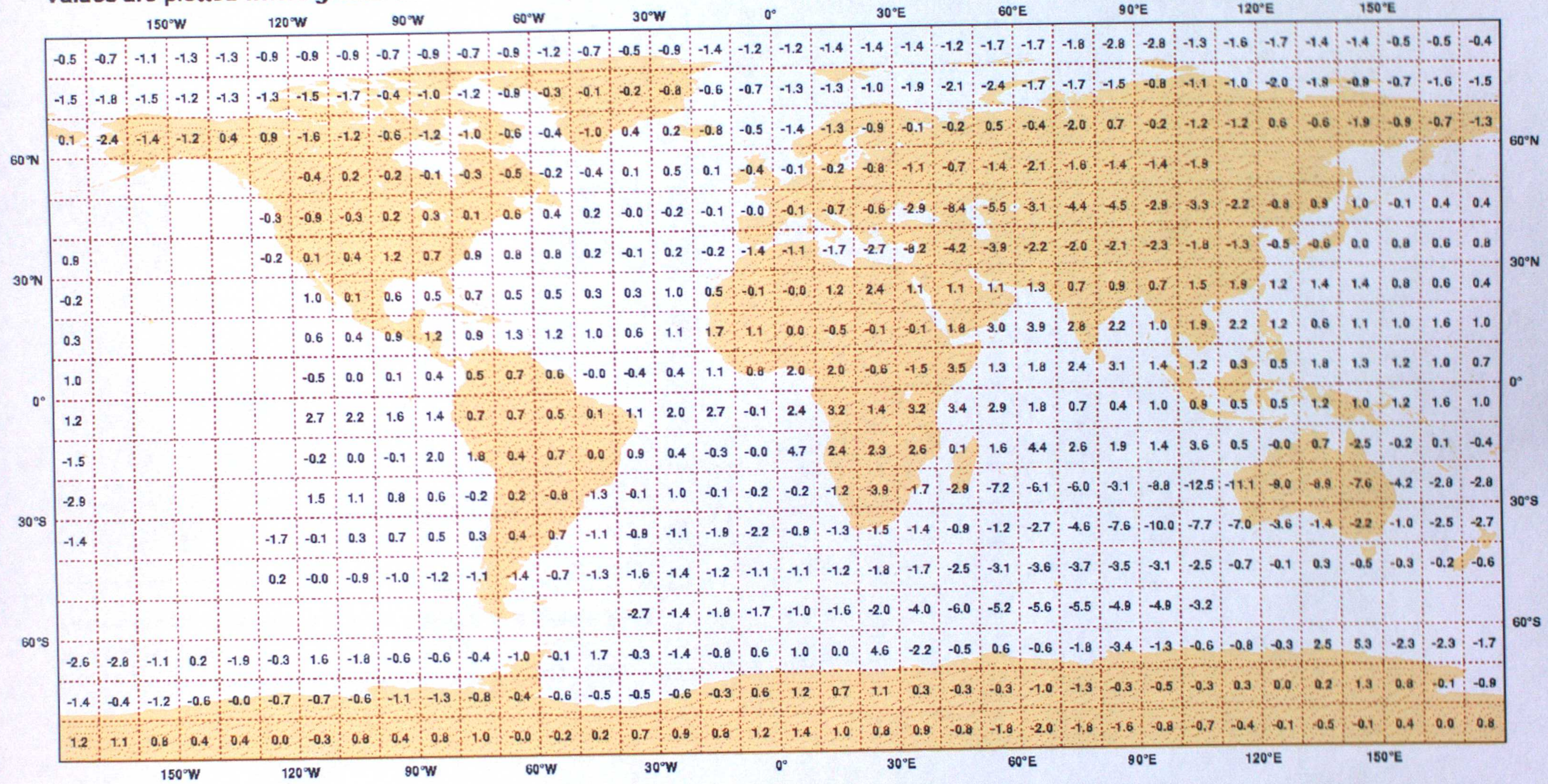
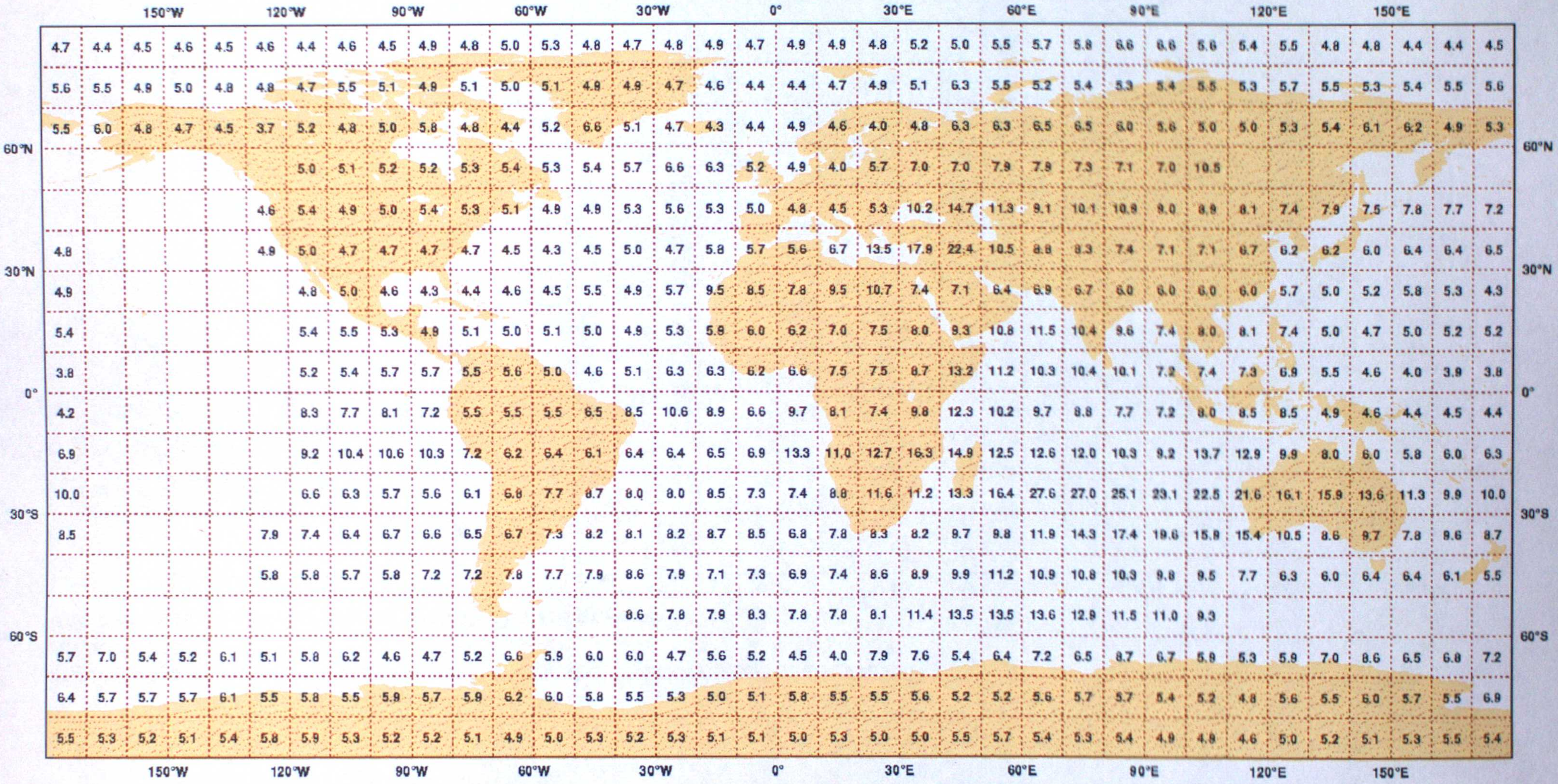

150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S
10.0m/s

Figure 23. SATOB 101 - 400 hPa mean O-B speed differences (ms-1). JULY 2006
All observations
Values are plotted where greater than 10 obs are present



-0.5	-0.7	-1.1	-1.3	-1.3	-0.9	-0.9	-0.9	-0.7	-0.9	-0.7	-0.9	-1.2	-0.7	-0.5	-0.9	-1.4	-1.2	-1.2	-1.4	-1.4	-1.4	-1.2	-1.7	-1.7	-1.8	-2.8	-2.8	-1.3	-1.6	-1.7	-1.4	-1.4	-0.5	-0.5	-0.4
-1.5	-1.8	-1.5	-1.2	-1.3	-1.3	-1.5	-1.7	-0.4	-1.0	-1.2	-0.9	-0.3	-0.1	-0.2	-0.8	-0.6	-0.7	-1.3	-1.3	-1.0	-1.9	-2.1	-2.4	-1.7	-1.7	-1.5	-0.8	-1.1	-1.0	-2.0	-1.8	-0.9	-0.7	-1.6	-1.5
0.1	-2.4	-1.4	-1.2	0.4	0.9	-1.6	-1.2	-0.6	-1.2	-1.0	-0.6	-0.4	-1.0	0.4	0.2	-0.8	-0.5	-1.4	-1.3	-0.9	-0.1	-0.2	0.5	-0.4	-2.0	0.7	-0.2	-1.2	-1.2	0.6	-0.6	-1.9	-0.9	-0.7	-1.3
						-0.4	0.2	-0.2	-0.1	-0.3	-0.5	-0.2	-0.4	0.1	0.5	0.1	-0.4	-0.1	-0.2	-0.8	-1.1	-0.7	-1.4	-2.1	-1.6	-1.4	-1.4	-1.9							
					-0.3	-0.9	-0.3	0.2	0.3	0.1	0.6	0.4	0.2	-0.0	-0.2	-0.1	-0.0	-0.1	-0.7	-0.6	-2.9	-8.4	-5.5	-3.1	-4.4	-4.5	-2.9	-3.3	-2.2	-0.8	0.9	1.0	-0.1	0.4	0.4
0.8					-0.2	0.1	0.4	1.2	0.7	0.9	0.8	0.8	0.2	-0.1	0.2	-0.2	-1.4	-1.1	-1.7	-2.7	-8.2	-4.2	-3.9	-2.2	-2.0	-2.1	-2.3	-1.8	-1.3	-0.5	-0.6	0.0	0.8	0.6	0.8
-0.2						1.0	0.1	0.6	0.5	0.7	0.5	0.5	0.3	0.3	1.0	0.5	-0.1	-0.0	1.2	2.4	1.1	1.1	1.1	1.3	0.7	0.9	0.7	1.5	1.9	1.2	1.4	1.4	0.8	0.6	0.4
0.3						0.6	0.4	0.9	1.2	0.9	1.3	1.2	1.0	0.6	1.1	1.7	1.1	0.0	-0.5	-0.1	-0.1	1.8	3.0	3.9	2.8	2.2	1.0	1.9	2.2	1.2	0.6	1.1	1.0	1.6	1.0
1.0						-0.5	0.0	0.1	0.4	0.5	0.7	0.6	-0.0	-0.4	0.4	1.1	0.8	2.0	2.0	-0.6	-1.5	3.5	1.3	1.8	2.4	3.1	1.4	1.2	0.3	0.5	1.8	1.3	1.2	1.0	0.7
1.2						2.7	2.2	1.6	1.4	0.7	0.7	0.5	0.1	1.1	2.0	2.7	-0.1	2.4	3.2	1.4	3.2	3.4	2.9	1.8	0.7	0.4	1.0	0.9	0.5	0.5	1.2	1.0	1.2	1.6	1.0
-1.5						-0.2	0.0	-0.1	2.0	1.8	0.4	0.7	0.0	0.9	0.4	-0.3	-0.0	4.7	2.4	2.3	2.6	0.1	1.6	4.4	2.6	1.9	1.4	3.6	0.5	-0.0	0.7	-2.5	-0.2	0.1	-0.4
-2.9						1.5	1.1	0.8	0.6	-0.2	0.2	-0.8	-1.3	-0.1	1.0	-0.1	-0.2	-0.2	-1.2	-3.9	-1.7	-2.9	-7.2	-6.1	-6.0	-3.1	-8.8	-12.5	-11.1	-9.0	-8.9	-7.6	-4.2	-2.8	-2.8
-1.4					-1.7	-0.1	0.3	0.7	0.5	0.3	0.4	0.7	-1.1	-0.9	-1.1	-1.9	-2.2	-0.9	-1.3	-1.5	-1.4	-0.9	-1.2	-2.7	-4.6	-7.6	-10.0	-7.7	-7.0	-3.6	-1.4	-2.2	-1.0	-2.5	-2.7
					0.2	-0.0	-0.9	-1.0	-1.2	-1.1	-1.4	-0.7	-1.3	-1.6	-1.4	-1.2	-1.1	-1.1	-1.2	-1.8	-1.7	-2.5	-3.1	-3.6	-3.7	-3.5	-3.1	-2.5	-0.7	-0.1	0.3	-0.5	-0.3	-0.2	-0.6
														-2.7	-1.4	-1.8	-1.7	-1.0	-1.6	-2.0	-4.0	-6.0	-5.2	-5.6	-5.5	-4.9	-4.9	-3.2							
-2.6	-2.8	-1.1	0.2	-1.9	-0.3	1.6	-1.8	-0.6	-0.6	-0.4	-1.0	-0.1	1.7	-0.3	-1.4	-0.8	0.6	1.0	0.0	4.6	-2.2	-0.5	0.6	-0.6	-1.8	-3.4	-1.3	-0.6	-0.8	-0.3	2.5	5.3	-2.3	-2.3	-1.7
-1.4	-0.4	-1.2	-0.6	-0.0	-0.7	-0.7	-0.6	-1.1	-1.3	-0.8	-0.4	-0.6	-0.5	-0.5	-0.6	-0.3	0.6	1.2	0.7	1.1	0.3	-0.3	-0.3	-1.0	-1.3	-0.3	-0.5	-0.3	0.3	0.0	0.2	1.3	0.8	-0.1	-0.9
1.2	1.1	0.8	0.4	0.4	0.0	-0.3	0.8	0.4	0.8	1.0	-0.0	-0.2	0.2	0.7	0.9	0.8	1.2	1.4	1.0	0.8	0.9	-0.8	-1.8	-2.0	-1.8	-1.6	-0.8	-0.7	-0.4	-0.1	-0.5	-0.1	0.4	0.0	0.8

Figure 24. SATOB 101 - 400 hPa mean RMS O-B vector differences (ms-1). JULY 2006
All observations
Values are plotted where greater than 10 obs are present



4.7	4.4	4.5	4.6	4.5	4.6	4.4	4.6	4.5	4.9	4.8	5.0	5.3	4.8	4.7	4.8	4.9	4.7	4.9	4.9	4.8	5.2	5.0	5.5	5.7	5.8	6.6	6.6	5.6	5.4	5.5	4.8	4.8	4.4	4.4	4.5
5.6	5.5	4.9	5.0	4.8	4.8	4.7	5.5	5.1	4.9	5.1	5.0	5.1	4.9	4.9	4.7	4.6	4.4	4.4	4.7	4.9	5.1	6.3	5.5	5.2	5.4	5.3	5.4	5.5	5.3	5.7	5.5	5.3	5.4	5.5	5.6
5.5	6.0	4.8	4.7	4.5	3.7	5.2	4.8	5.0	5.8	4.8	4.4	5.2	6.6	5.1	4.7	4.3	4.4	4.9	4.6	4.0	4.8	6.3	6.3	6.5	6.5	6.0	5.6	5.0	5.0	5.3	5.4	6.1	6.2	4.9	5.3
						5.0	5.1	5.2	5.2	5.3	5.4	5.3	5.4	5.7	6.6	6.3	5.2	4.9	4.0	5.7	7.0	7.0	7.9	7.8	7.3	7.1	7.0	10.5							
					4.6	5.4	4.9	5.0	5.4	5.3	5.1	4.9	4.9	5.3	5.6	5.3	5.0	4.8	4.5	5.3	10.2	14.7	11.3	9.1	10.1	10.9	9.0	8.9	8.1	7.4	7.9	7.5	7.8	7.7	7.2
4.8					4.9	5.0	4.7	4.7	4.7	4.7	4.5	4.3	4.5	5.0	4.7	5.8	5.7	5.6	6.7	13.5	17.9	22.4	10.5	8.8	8.3	7.4	7.1	7.1	6.7	6.2	6.2	6.0	6.4	6.4	6.5
4.9						4.8	5.0	4.6	4.3	4.4	4.6	4.5	5.5	4.9	5.7	9.5	8.5	7.8	9.5	10.7	7.4	7.1	6.4	6.9	6.7	6.0	6.0	6.0	6.0	5.7	5.0	5.2	5.8	5.3	4.3
5.4						5.4	5.5	5.3	4.9	5.1	5.0	5.1	5.0	4.9	5.3	5.9	6.0	6.2	7.0	7.5	8.0	9.3	10.8	11.5	10.4	9.6	7.4	8.0	8.1	7.4	5.0	4.7	5.0	5.2	5.2
3.8						5.2	5.4	5.7	5.7	5.5	5.6	5.0	4.6	5.1	6.3	6.3	6.2	6.6	7.5	7.5	8.7	13.2	11.2	10.3	10.4	10.1	7.2	7.4	7.3	6.9	5.5	4.6	4.0	3.9	3.8
4.2						8.3	7.7	8.1	7.2	5.5	5.5	5.5	6.5	8.5	10.6	8.9	6.6	9.7	8.1	7.4	9.8	12.3	10.2	9.7	8.8	7.7	7.2	8.0	8.5	8.5	4.9	4.6	4.4	4.5	4.4
6.9						9.2	10.4	10.6	10.3	7.2	6.2	6.4	6.1	6.4	6.4	6.5	6.9	13.3	11.0	12.7	16.3	14.9	12.5	12.6	12.0	10.3	9.2	13.7	12.9	9.9	8.0	6.0	5.8	6.0	6.3
10.0						6.6	6.3	5.7	5.6	6.1	6.8	7.7	8.7	8.0	8.0	8.5	7.3	7.4	8.8	11.6	11.2	13.3	16.4	27.6	27.0	25.1	23.1	22.5	21.6	16.1	15.9	13.6	11.3	9.9	10.0
8.5					7.9	7.4	6.4	6.7	6.6	6.5	6.7	7.3	8.2	8.1	8.2	8.7	8.5	6.8	7.8	8.3	8.2	9.7	9.8	11.9	14.3	17.4	19.6	15.8	15.4	10.5	8.6	9.7	7.8	9.6	8.7
					5.8	5.8	5.7	5.8	7.2	7.2	7.8	7.7	7.9	8.6	7.9	7.1	7.3	6.9	7.4	8.6	8.9	9.9	11.2	10.9	10.8	10.3	9.8	9.5	7.7	6.3	6.0	6.4	6.4	6.1	5.5
														8.6	7.8	7.9	8.3	7.8	7.8	8.1	11.4	13.5	13.5	13.6	12.9	11.5	11.0	9.3							
5.7	7.0	5.4	5.2	6.1	5.1	5.8	6.2	4.6	4.7	5.2	6.6	5.9	6.0	6.0	4.7	5.6	5.2	4.5	4.0	7.9	7.6	5.4	6.4	7.2	6.5	8.7	6.7	5.9	5.3	5.9	7.0	8.6	6.5	6.8	7.2
6.4	5.7	5.7	5.7	6.1	5.5	5.8	5.5	5.9	5.7	5.9	6.2	6.0	5.8	5.5	5.3	5.0	5.1	5.8	5.5	5.5	5.6	5.2	5.2	5.6	5.7	5.7	5.4	5.2	4.8	5.6	5.5	6.0	5.7	5.5	6.9
5.5	5.3	5.2	5.1	5.4	5.8	5.9	5.3	5.2	5.2	5.1	4.9	5.0	5.3	5.2	5.3	5.1	5.1	5.0	5.3	5.0	5.0	5.5	5.7	5.4	5.3	5.4	4.9	4.8	4.6	5.0	5.2	5.1	5.3	5.5	5.4

MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: EXETER

MONTH: Jul 06

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from NOAA-15, NOAA-16 and NOAA-18.

Standard of comparison :Background field from UKMO global model.

Selection Criteria :All soundings.

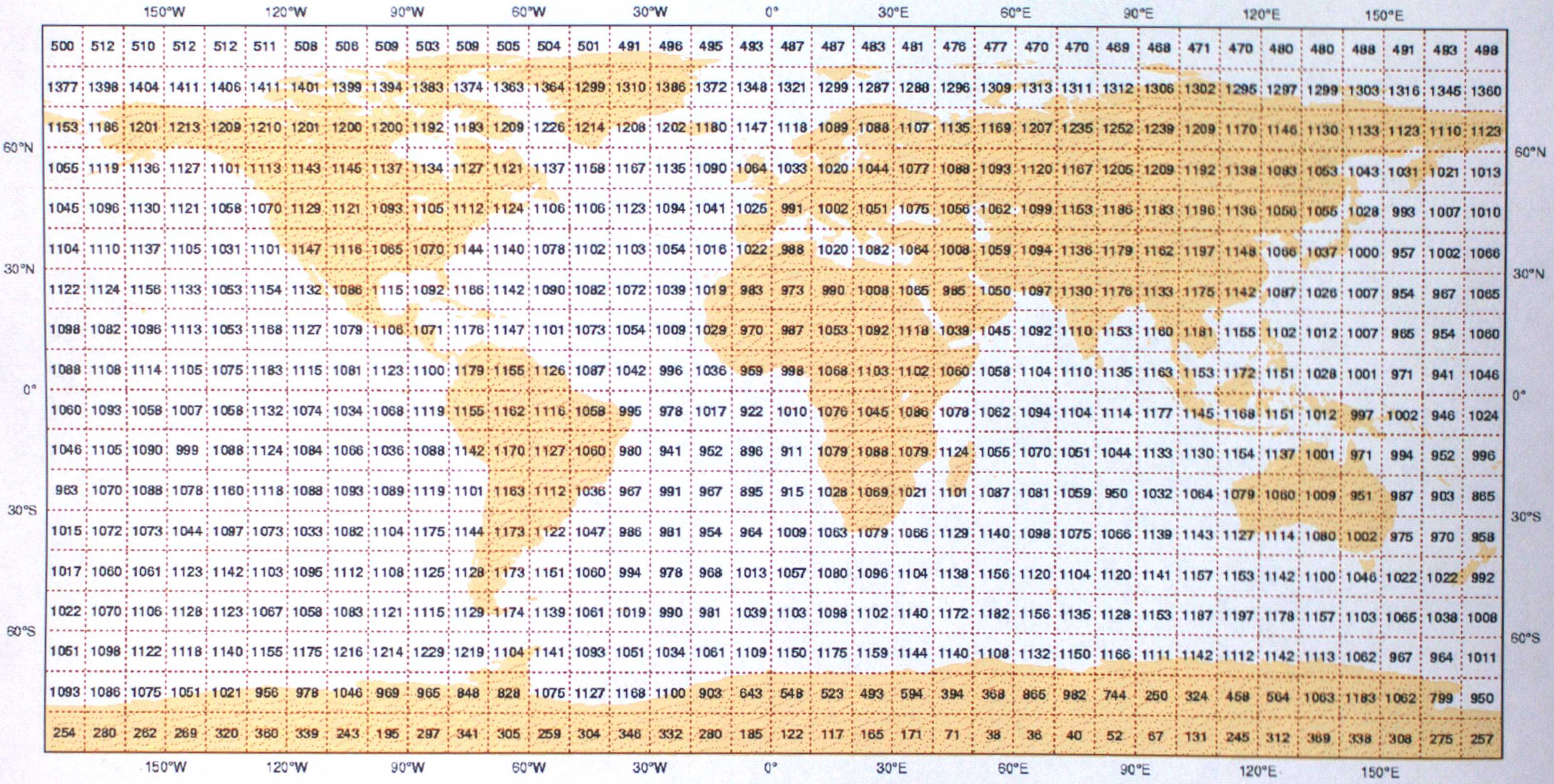
Data Extracted :Sounding channels (and approximate weighting function peaks, hPa)
HIRS8 (Surface)
HIRS15 (700)
HIRS11 (500-700)
HIRS4 (400)
AMSUA5 (700)
AMSUA7 (300)
AMSUA9 (100)

:Mean and standard deviation observation-minus-background brightness temperature differences

Figure 25. ATOVS mean daily count. JULY 2006

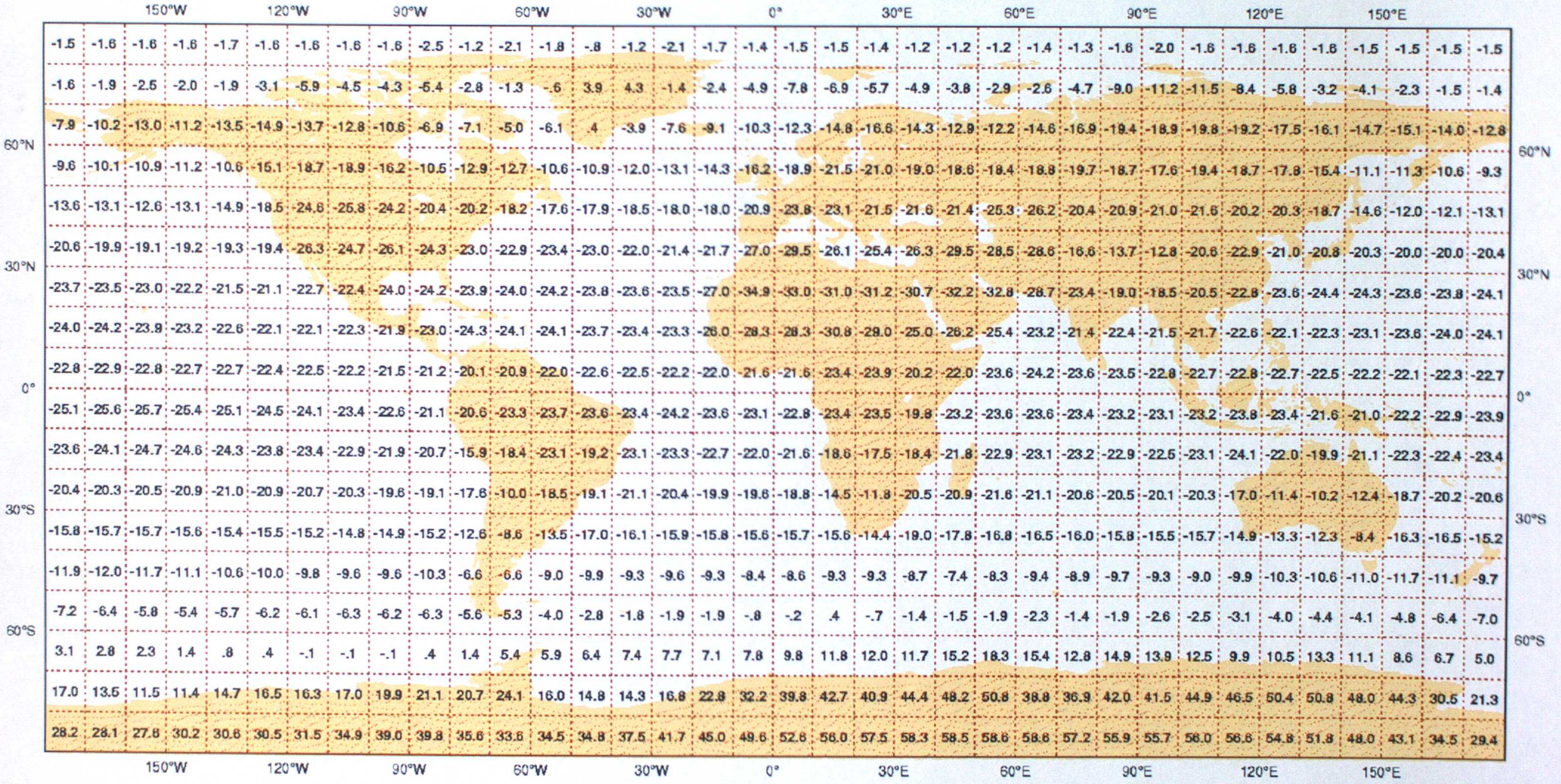
NOAA15, using all observations

Global average number of observations in 24 hours = 652490



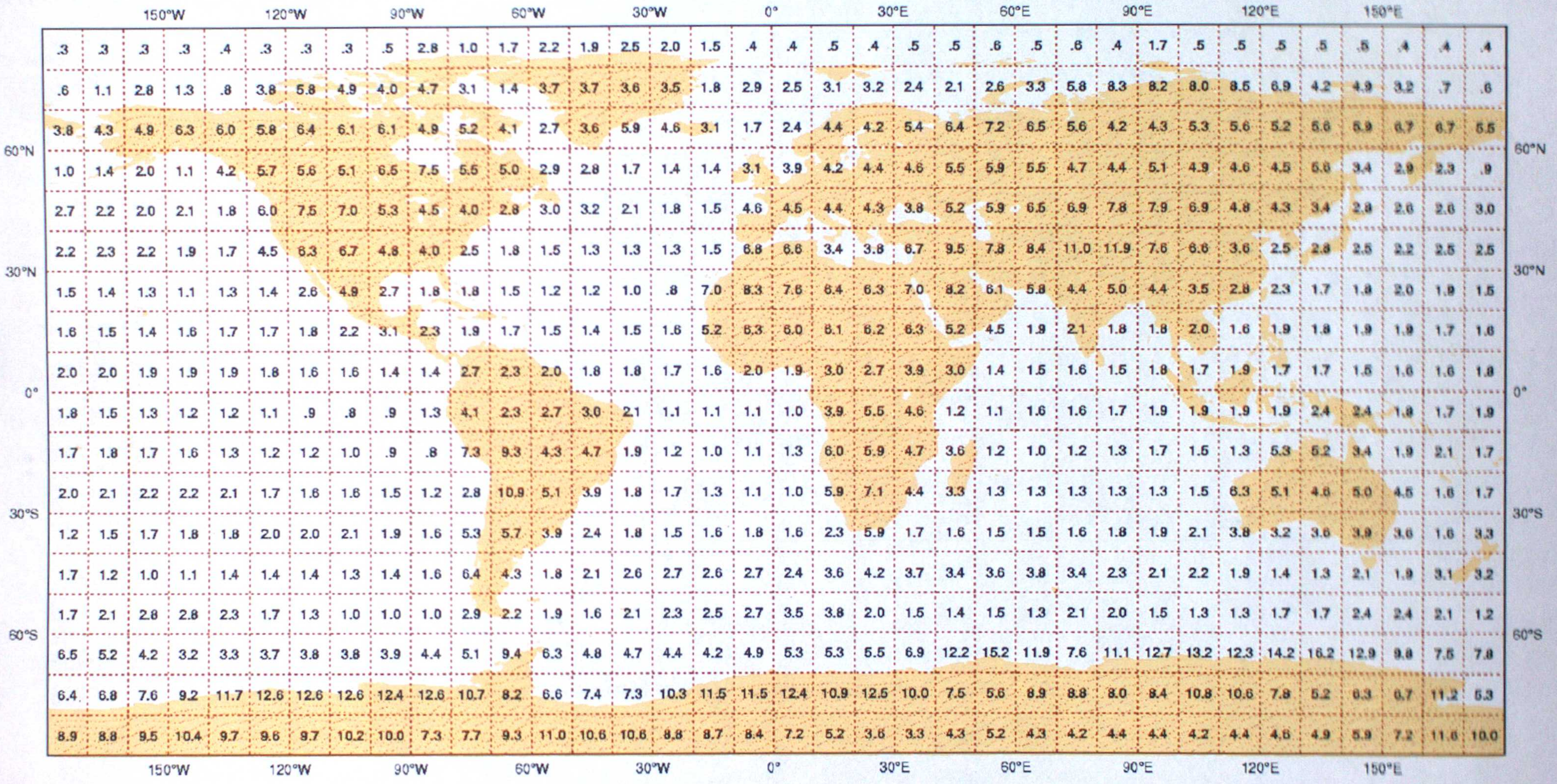
500	512	510	512	512	511	508	506	509	503	509	505	504	501	491	496	495	493	487	487	483	481	476	477	470	470	469	468	471	470	480	480	488	491	493	498
1377	1398	1404	1411	1406	1411	1401	1399	1394	1383	1374	1363	1364	1299	1310	1386	1372	1348	1321	1299	1287	1288	1296	1309	1313	1311	1312	1306	1302	1295	1297	1299	1303	1316	1345	1360
1153	1186	1201	1213	1209	1210	1201	1200	1200	1192	1193	1209	1226	1214	1208	1202	1180	1147	1118	1089	1088	1107	1135	1169	1207	1235	1252	1239	1209	1170	1146	1130	1133	1123	1110	1123
1055	1119	1136	1127	1101	1113	1143	1145	1137	1134	1127	1121	1137	1158	1167	1135	1090	1064	1033	1020	1044	1077	1088	1093	1120	1167	1205	1209	1192	1138	1083	1053	1043	1031	1021	1013
1045	1096	1130	1121	1058	1070	1129	1121	1093	1105	1112	1124	1106	1106	1123	1094	1041	1025	991	1002	1051	1075	1056	1062	1099	1153	1186	1183	1196	1136	1056	1055	1028	993	1007	1010
1104	1110	1137	1105	1031	1101	1147	1116	1065	1070	1144	1140	1078	1102	1103	1054	1016	1022	988	1020	1082	1064	1008	1059	1094	1136	1179	1162	1197	1148	1066	1037	1000	957	1002	1066
1122	1124	1156	1133	1053	1154	1132	1086	1115	1092	1166	1142	1090	1082	1072	1039	1019	983	973	990	1008	1065	985	1050	1097	1130	1176	1133	1175	1142	1087	1026	1007	954	967	1065
1098	1082	1096	1113	1053	1168	1127	1079	1106	1071	1176	1147	1101	1073	1054	1009	1029	970	987	1053	1092	1118	1039	1045	1092	1110	1153	1160	1181	1155	1102	1012	1007	965	954	1060
1088	1108	1114	1105	1075	1183	1115	1081	1123	1100	1179	1155	1126	1087	1042	996	1036	959	998	1068	1103	1102	1060	1058	1104	1110	1135	1163	1153	1172	1151	1028	1001	971	941	1046
1060	1093	1058	1007	1058	1132	1074	1034	1068	1119	1155	1162	1116	1058	995	978	1017	922	1010	1076	1045	1086	1078	1062	1094	1104	1114	1177	1145	1168	1151	1012	997	1002	946	1024
1046	1105	1090	999	1088	1124	1084	1066	1036	1088	1142	1170	1127	1060	980	941	952	896	911	1079	1088	1079	1124	1055	1070	1051	1044	1133	1130	1154	1137	1001	971	994	952	996
963	1070	1088	1078	1160	1118	1088	1093	1089	1119	1101	1163	1112	1036	967	991	967	895	915	1028	1069	1021	1101	1087	1081	1059	950	1032	1064	1079	1060	1009	951	987	903	865
1015	1072	1073	1044	1097	1073	1033	1082	1104	1175	1144	1173	1122	1047	986	981	954	964	1009	1063	1079	1066	1129	1140	1098	1075	1066	1139	1143	1127	1114	1080	1002	975	970	958
1017	1060	1061	1123	1142	1103	1095	1112	1108	1125	1128	1173	1151	1060	994	978	968	1013	1057	1080	1096	1104	1138	1156	1120	1104	1120	1141	1157	1153	1142	1100	1046	1022	1022	992
1022	1070	1106	1128	1123	1067	1058	1083	1121	1115	1129	1174	1139	1061	1019	990	981	1039	1103	1098	1102	1140	1172	1182	1156	1135	1128	1153	1187	1197	1178	1157	1103	1065	1038	1008
1051	1098	1122	1118	1140	1155	1175	1216	1214	1229	1219	1104	1141	1093	1051	1034	1061	1109	1150	1175	1159	1144	1140	1108	1132	1150	1166	1111	1142	1112	1142	1113	1062	967	964	1011
1093	1086	1075	1051	1021	956	978	1046	969	965	848	828	1075	1127	1168	1100	903	643	548	523	493	594	394	368	865	982	744	250	324	458	564	1063	1183	1062	799	950
254	280	262	269	320	360	339	243	195	297	341	305	259	304	346	332	280	185	122	117	165	171	71	38	36	40	52	67	131	245	312	369	338	308	275	257

Figure 26. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS8 (Surface)
NOAA15, using all observations



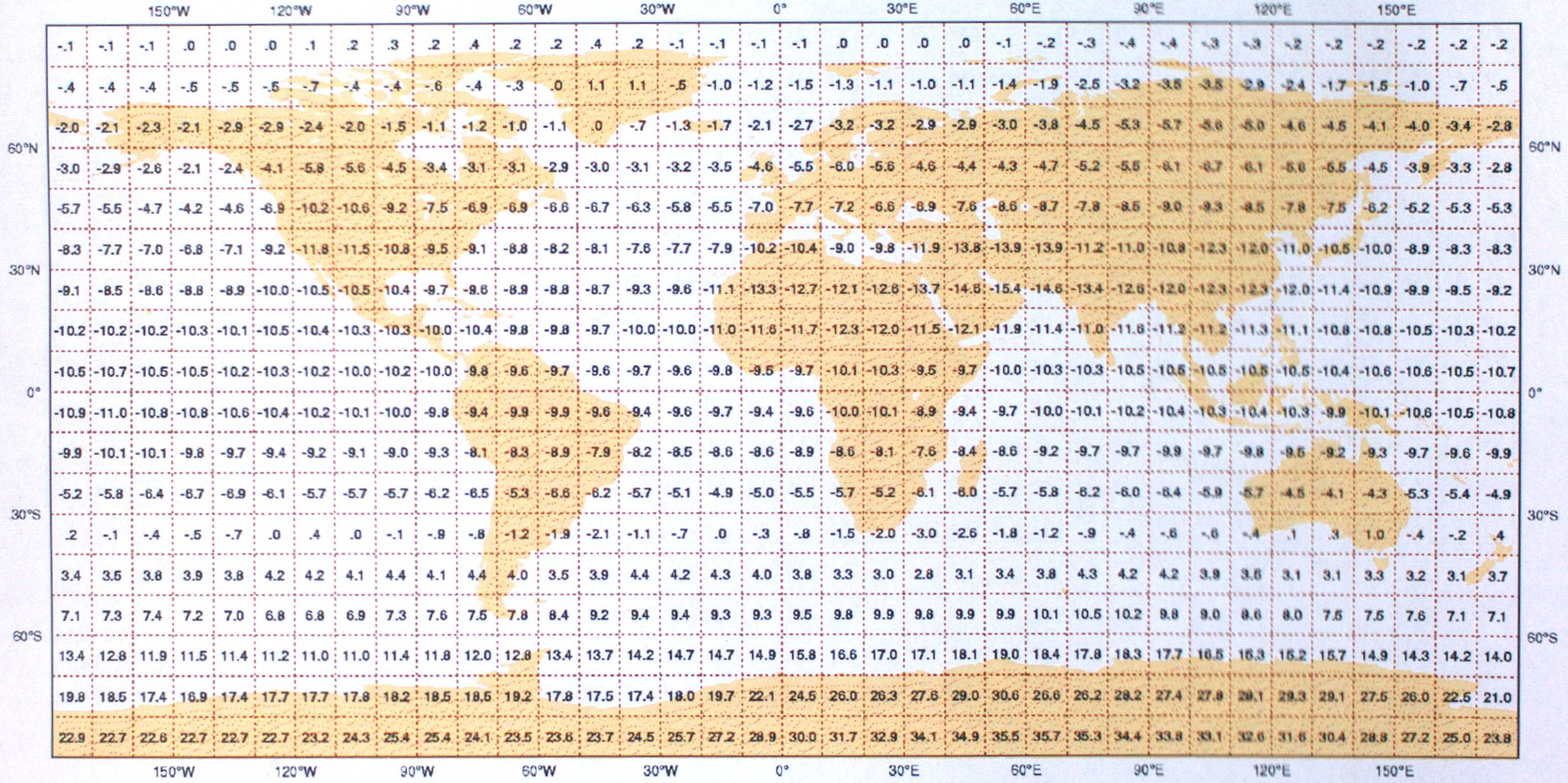
-1.5	-1.6	-1.6	-1.6	-1.7	-1.6	-1.6	-1.6	-1.6	-2.5	-1.2	-2.1	-1.8	-.8	-1.2	-2.1	-1.7	-1.4	-1.5	-1.5	-1.4	-1.2	-1.2	-1.2	-1.4	-1.3	-1.6	-2.0	-1.6	-1.6	-1.6	-1.6	-1.5	-1.5	-1.5	-1.5
-1.6	-1.9	-2.5	-2.0	-1.9	-3.1	-5.9	-4.5	-4.3	-5.4	-2.8	-1.3	-.6	3.9	4.3	-1.4	-2.4	-4.9	-7.8	-6.9	-5.7	-4.9	-3.8	-2.9	-2.6	-4.7	-9.0	-11.2	-11.5	-8.4	-5.8	-3.2	-4.1	-2.3	-1.5	-1.4
-7.9	-10.2	-13.0	-11.2	-13.5	-14.9	-13.7	-12.8	-10.6	-6.9	-7.1	-5.0	-6.1	.4	-3.9	-7.6	-9.1	-10.3	-12.3	-14.8	-16.6	-14.3	-12.9	-12.2	-14.6	-16.9	-19.4	-18.9	-19.8	-19.2	-17.5	-16.1	-14.7	-15.1	-14.0	-12.8
-9.6	-10.1	-10.9	-11.2	-10.6	-15.1	-18.7	-18.9	-16.2	-10.5	-12.9	-12.7	-10.6	-10.9	-12.0	-13.1	-14.3	-16.2	-18.9	-21.5	-21.0	-19.0	-18.6	-18.4	-18.8	-19.7	-18.7	-17.6	-19.4	-18.7	-17.8	-15.4	-11.1	-11.3	-10.6	-9.3
-13.6	-13.1	-12.6	-13.1	-14.9	-18.5	-24.6	-25.8	-24.2	-20.4	-20.2	-18.2	-17.6	-17.9	-18.5	-18.0	-18.0	-20.9	-23.8	-23.1	-21.5	-21.6	-21.4	-25.3	-26.2	-20.4	-20.9	-21.0	-21.6	-20.2	-20.3	-18.7	-14.6	-12.0	-12.1	-13.1
-20.6	-19.9	-19.1	-19.2	-19.3	-19.4	-26.3	-24.7	-26.1	-24.3	-23.0	-22.9	-23.4	-23.0	-22.0	-21.4	-21.7	-27.0	-29.5	-26.1	-25.4	-26.3	-29.5	-28.5	-28.6	-16.6	-13.7	-12.8	-20.6	-22.9	-21.0	-20.8	-20.3	-20.0	-20.0	-20.4
-23.7	-23.5	-23.0	-22.2	-21.5	-21.1	-22.7	-22.4	-24.0	-24.2	-23.9	-24.0	-24.2	-23.8	-23.6	-23.5	-27.0	-34.9	-33.0	-31.0	-31.2	-30.7	-32.2	-32.8	-28.7	-23.4	-19.0	-18.5	-20.5	-22.8	-23.6	-24.4	-24.3	-23.6	-23.8	-24.1
-24.0	-24.2	-23.9	-23.2	-22.6	-22.1	-22.1	-22.3	-21.9	-23.0	-24.3	-24.1	-24.1	-23.7	-23.4	-23.3	-26.0	-28.3	-28.3	-30.8	-29.0	-25.0	-26.2	-25.4	-23.2	-21.4	-22.4	-21.5	-21.7	-22.6	-22.1	-22.3	-23.1	-23.6	-24.0	-24.1
-22.8	-22.9	-22.8	-22.7	-22.7	-22.4	-22.5	-22.2	-21.5	-21.2	-20.1	-20.9	-22.0	-22.6	-22.5	-22.2	-22.0	-21.6	-21.6	-23.4	-23.9	-20.2	-22.0	-23.6	-24.2	-23.6	-23.5	-22.8	-22.7	-22.8	-22.7	-22.5	-22.2	-22.1	-22.3	-22.7
-25.1	-25.6	-25.7	-25.4	-25.1	-24.5	-24.1	-23.4	-22.6	-21.1	-20.6	-23.3	-23.7	-23.6	-23.4	-24.2	-23.6	-23.1	-22.8	-23.4	-23.5	-19.8	-23.2	-23.6	-23.6	-23.4	-23.2	-23.1	-23.2	-23.8	-23.4	-21.6	-21.0	-22.2	-22.9	-23.9
-23.6	-24.1	-24.7	-24.6	-24.3	-23.8	-23.4	-22.9	-21.9	-20.7	-15.9	-18.4	-23.1	-19.2	-23.1	-23.3	-22.7	-22.0	-21.6	-18.6	-17.5	-18.4	-21.8	-22.9	-23.1	-23.2	-22.9	-22.5	-23.1	-24.1	-22.0	-19.9	-21.1	-22.3	-22.4	-23.4
-20.4	-20.3	-20.5	-20.9	-21.0	-20.9	-20.7	-20.3	-19.6	-19.1	-17.6	-10.0	-18.5	-19.1	-21.1	-20.4	-19.9	-19.6	-18.8	-14.5	-11.8	-20.5	-20.9	-21.6	-21.1	-20.6	-20.5	-20.1	-20.3	-17.0	-11.4	-10.2	-12.4	-18.7	-20.2	-20.6
-15.8	-15.7	-15.7	-15.6	-15.4	-15.5	-15.2	-14.8	-14.9	-15.2	-12.6	-8.6	-13.5	-17.0	-16.1	-15.9	-15.8	-15.6	-15.7	-15.6	-14.4	-19.0	-17.8	-16.8	-16.5	-16.0	-15.8	-15.5	-15.7	-14.9	-13.3	-12.3	-8.4	-16.3	-16.5	-15.2
-11.9	-12.0	-11.7	-11.1	-10.6	-10.0	-9.8	-9.6	-9.6	-10.3	-6.6	-6.6	-9.0	-9.9	-9.3	-9.6	-9.3	-8.4	-8.6	-9.3	-9.3	-8.7	-7.4	-8.3	-9.4	-8.9	-9.7	-9.3	-9.0	-9.9	-10.3	-10.6	-11.0	-11.7	-11.1	-9.7
-7.2	-6.4	-5.8	-5.4	-5.7	-6.2	-6.1	-6.3	-6.2	-6.3	-5.6	-5.3	-4.0	-2.8	-1.8	-1.9	-1.9	-.8	-.2	.4	-.7	-1.4	-1.5	-1.9	-2.3	-1.4	-1.9	-2.6	-2.5	-3.1	-4.0	-4.4	-4.1	-4.8	-6.4	-7.0
3.1	2.8	2.3	1.4	.8	.4	-.1	-.1	-.1	.4	1.4	5.4	5.9	6.4	7.4	7.7	7.1	7.8	9.8	11.8	12.0	11.7	15.2	18.3	15.4	12.8	14.9	13.9	12.5	9.9	10.5	13.3	11.1	8.6	6.7	5.0
17.0	13.5	11.5	11.4	14.7	16.5	16.3	17.0	19.9	21.1	20.7	24.1	16.0	14.8	14.3	16.8	22.8	32.2	39.8	42.7	40.9	44.4	48.2	50.8	38.8	36.9	42.0	41.5	44.9	46.5	50.4	50.8	48.0	44.3	30.5	21.3
28.2	28.1	27.8	30.2	30.6	30.5	31.5	34.9	39.0	39.8	35.6	33.6	34.5	34.8	37.5	41.7	45.0	49.6	52.6	56.0	57.5	58.3	58.5	58.6	58.6	57.2	55.9	55.7	56.0	56.6	54.8	51.8	48.0	43.1	34.5	29.4

Figure 27. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS8 (Surface)
NOAA15, using all observations



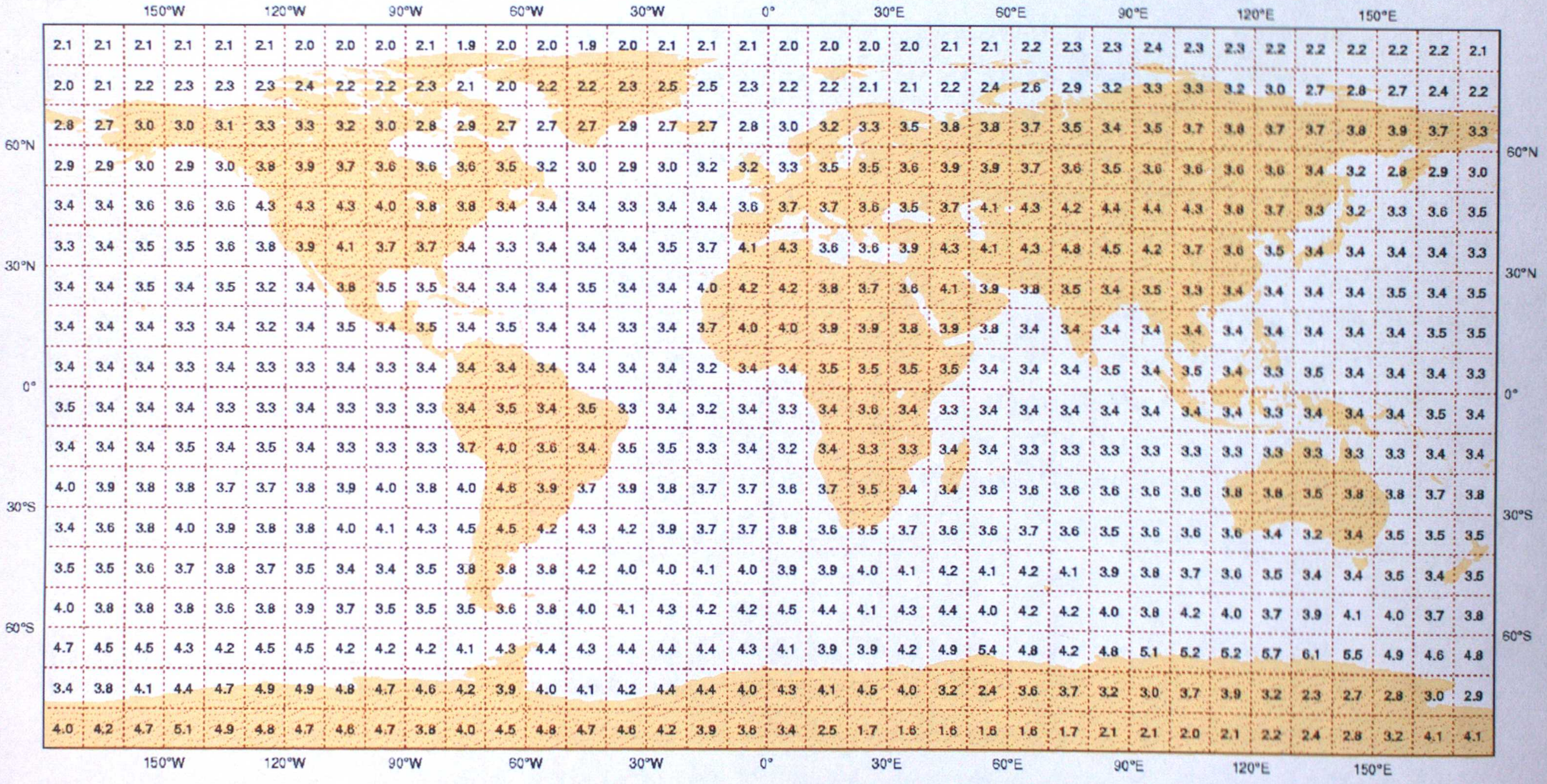
.3	.3	.3	.3	.4	.3	.3	.3	.5	2.8	1.0	1.7	2.2	1.9	2.5	2.0	1.5	.4	.4	.5	.4	.5	.5	.6	.5	.6	.4	1.7	.5	.5	.5	.5	.5	.4	.4	.4
.6	1.1	2.8	1.3	.8	3.8	5.8	4.9	4.0	4.7	3.1	1.4	3.7	3.7	3.6	3.5	1.8	2.9	2.5	3.1	3.2	2.4	2.1	2.6	3.3	5.8	8.3	8.2	8.0	8.5	6.9	4.2	4.9	3.2	.7	.6
3.8	4.3	4.9	6.3	6.0	5.8	6.4	6.1	6.1	4.9	5.2	4.1	2.7	3.6	5.9	4.6	3.1	1.7	2.4	4.4	4.2	5.4	6.4	7.2	6.5	5.6	4.2	4.3	5.3	5.6	5.2	5.6	5.9	6.7	6.7	5.5
1.0	1.4	2.0	1.1	4.2	5.7	5.6	5.1	6.5	7.5	5.5	5.0	2.9	2.8	1.7	1.4	1.4	3.1	3.9	4.2	4.4	4.6	5.5	5.9	5.5	4.7	4.4	5.1	4.9	4.6	4.5	5.6	3.4	2.9	2.3	.9
2.7	2.2	2.0	2.1	1.8	6.0	7.5	7.0	5.3	4.5	4.0	2.8	3.0	3.2	2.1	1.8	1.5	4.6	4.5	4.4	4.3	3.8	5.2	5.9	6.5	6.9	7.8	7.9	6.9	4.8	4.3	3.4	2.8	2.6	2.6	3.0
2.2	2.3	2.2	1.9	1.7	4.5	6.3	6.7	4.8	4.0	2.5	1.8	1.5	1.3	1.3	1.3	1.5	6.8	6.6	3.4	3.8	6.7	9.5	7.8	8.4	11.0	11.9	7.6	6.6	3.6	2.5	2.8	2.5	2.2	2.5	2.5
1.5	1.4	1.3	1.1	1.3	1.4	2.6	4.9	2.7	1.8	1.8	1.5	1.2	1.2	1.0	.8	7.0	8.3	7.6	6.4	6.3	7.0	8.2	6.1	5.8	4.4	5.0	4.4	3.5	2.8	2.3	1.7	1.8	2.0	1.9	1.5
1.6	1.5	1.4	1.6	1.7	1.7	1.8	2.2	3.1	2.3	1.9	1.7	1.5	1.4	1.5	1.6	5.2	6.3	6.0	6.1	6.2	6.3	5.2	4.5	1.9	2.1	1.8	1.8	2.0	1.6	1.9	1.8	1.9	1.9	1.7	1.6
2.0	2.0	1.9	1.9	1.9	1.8	1.6	1.6	1.4	1.4	2.7	2.3	2.0	1.8	1.8	1.7	1.6	2.0	1.9	3.0	2.7	3.9	3.0	1.4	1.5	1.6	1.5	1.8	1.7	1.9	1.7	1.7	1.5	1.6	1.6	1.8
1.8	1.5	1.3	1.2	1.2	1.1	.9	.8	.9	1.3	4.1	2.3	2.7	3.0	2.1	1.1	1.1	1.1	1.0	3.9	5.5	4.6	1.2	1.1	1.6	1.6	1.7	1.9	1.9	1.9	1.9	2.4	2.4	1.8	1.7	1.9
1.7	1.8	1.7	1.6	1.3	1.2	1.2	1.0	.9	.8	7.3	9.3	4.3	4.7	1.9	1.2	1.0	1.1	1.3	6.0	5.9	4.7	3.6	1.2	1.0	1.2	1.3	1.7	1.5	1.3	5.3	5.2	3.4	1.9	2.1	1.7
2.0	2.1	2.2	2.2	2.1	1.7	1.6	1.6	1.5	1.2	2.8	10.9	5.1	3.9	1.8	1.7	1.3	1.1	1.0	5.9	7.1	4.4	3.3	1.3	1.3	1.3	1.3	1.3	1.5	6.3	5.1	4.6	5.0	4.5	1.6	1.7
1.2	1.5	1.7	1.8	1.8	2.0	2.0	2.1	1.9	1.6	5.3	5.7	3.9	2.4	1.8	1.5	1.6	1.8	1.6	2.3	5.9	1.7	1.6	1.5	1.5	1.6	1.8	1.9	2.1	3.8	3.2	3.6	3.9	3.6	1.6	3.3
1.7	1.2	1.0	1.1	1.4	1.4	1.4	1.3	1.4	1.6	6.4	4.3	1.8	2.1	2.6	2.7	2.6	2.7	2.4	3.6	4.2	3.7	3.4	3.6	3.8	3.4	2.3	2.1	2.2	1.9	1.4	1.3	2.1	1.9	3.1	3.2
1.7	2.1	2.8	2.8	2.3	1.7	1.3	1.0	1.0	1.0	2.9	2.2	1.9	1.6	2.1	2.3	2.5	2.7	3.5	3.8	2.0	1.5	1.4	1.5	1.3	2.1	2.0	1.5	1.3	1.3	1.7	1.7	2.4	2.4	2.1	1.2
6.5	5.2	4.2	3.2	3.3	3.7	3.8	3.8	3.9	4.4	5.1	9.4	6.3	4.8	4.7	4.4	4.2	4.9	5.3	5.3	5.5	6.9	12.2	15.2	11.9	7.6	11.1	12.7	13.2	12.3	14.2	16.2	12.9	9.8	7.5	7.8
6.4	6.8	7.6	9.2	11.7	12.6	12.6	12.6	12.4	12.6	10.7	8.2	6.6	7.4	7.3	10.3	11.5	11.5	12.4	10.9	12.5	10.0	7.5	5.6	8.9	8.8	8.0	8.4	10.8	10.6	7.8	5.2	6.3	6.7	11.2	5.3
8.9	8.8	9.5	10.4	9.7	9.6	9.7	10.2	10.0	7.3	7.7	9.3	11.0	10.6	10.6	8.8	8.7	8.4	7.2	5.2	3.6	3.3	4.3	5.2	4.3	4.2	4.4	4.4	4.2	4.4	4.6	4.9	5.9	7.2	11.6	10.0

Figure 28. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS15 (700 hPa)
NOAA15, using all observations



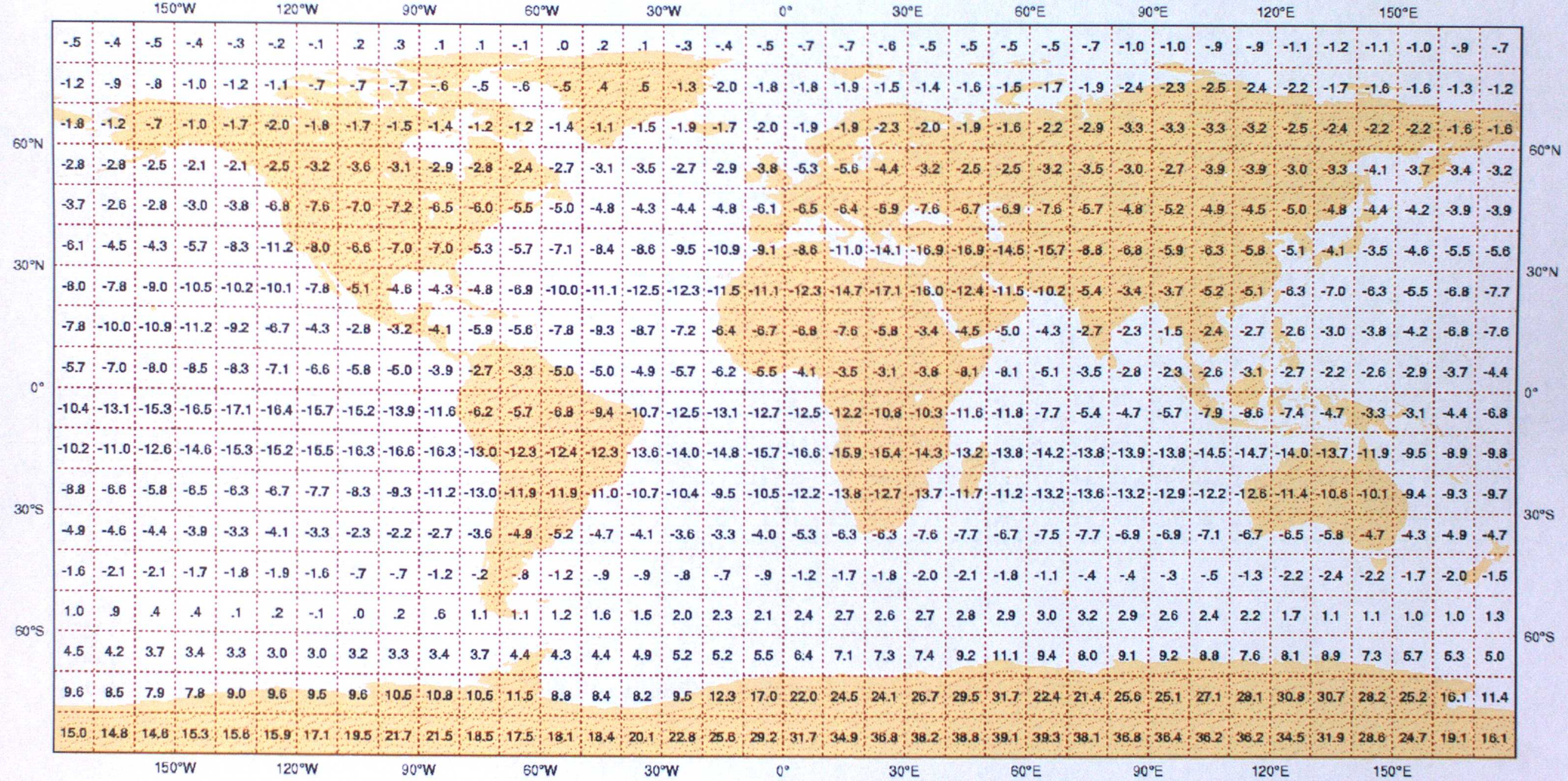
-.1	-.1	-.1	.0	.0	.0	.1	.2	.3	.2	.4	.2	.2	.4	.2	-.1	-.1	-.1	-.1	.0	.0	.0	.0	-.1	-.2	-.3	-.4	-.4	-.3	-.3	-.2	-.2	-.2	-.2	-.2	-.2
-.4	-.4	-.4	-.5	-.5	-.5	-.7	-.4	-.4	-.6	-.4	-.3	.0	1.1	1.1	-.5	-1.0	-1.2	-1.5	-1.3	-1.1	-1.0	-1.1	-1.4	-1.9	-2.5	-3.2	-3.5	-3.5	-2.9	-2.4	-1.7	-1.5	-1.0	-.7	-.5
-2.0	-2.1	-2.3	-2.1	-2.9	-2.9	-2.4	-2.0	-1.5	-1.1	-1.2	-1.0	-1.1	.0	-.7	-1.3	-1.7	-2.1	-2.7	-3.2	-3.2	-2.9	-2.9	-3.0	-3.8	-4.5	-5.3	-5.7	-5.6	-5.0	-4.6	-4.5	-4.1	-4.0	-3.4	-2.8
-3.0	-2.9	-2.6	-2.1	-2.4	-4.1	-5.8	-5.6	-4.5	-3.4	-3.1	-3.1	-2.9	-3.0	-3.1	-3.2	-3.5	-4.6	-5.5	-6.0	-5.6	-4.6	-4.4	-4.3	-4.7	-5.2	-5.5	-6.1	-6.7	-6.1	-5.6	-6.5	-4.5	-3.9	-3.3	-2.8
-5.7	-5.5	-4.7	-4.2	-4.6	-6.9	-10.2	-10.6	-9.2	-7.5	-6.9	-6.9	-6.6	-6.7	-6.3	-5.8	-5.5	-7.0	-7.7	-7.2	-6.6	-6.9	-7.6	-8.6	-8.7	-7.8	-8.5	-9.0	-9.3	-8.5	-7.8	-7.5	-6.2	-5.2	-5.3	-5.3
-8.3	-7.7	-7.0	-6.8	-7.1	-9.2	-11.8	-11.5	-10.8	-9.5	-9.1	-8.8	-8.2	-8.1	-7.6	-7.7	-7.9	-10.2	-10.4	-9.0	-9.8	-11.9	-13.8	-13.9	-13.9	-11.2	-11.0	-10.8	-12.3	-12.0	-11.0	-10.5	-10.0	-8.9	-8.3	-8.3
-9.1	-8.5	-8.6	-8.8	-8.9	-10.0	-10.5	-10.5	-10.4	-9.7	-9.6	-8.9	-8.8	-8.7	-9.3	-9.6	-11.1	-13.3	-12.7	-12.1	-12.6	-13.7	-14.6	-15.4	-14.6	-13.4	-12.6	-12.0	-12.3	-12.3	-12.0	-11.4	-10.9	-9.9	-9.5	-9.2
-10.2	-10.2	-10.2	-10.3	-10.1	-10.5	-10.4	-10.3	-10.3	-10.0	-10.4	-9.8	-9.8	-9.7	-10.0	-10.0	-11.0	-11.6	-11.7	-12.3	-12.0	-11.5	-12.1	-11.9	-11.4	-11.0	-11.6	-11.2	-11.2	-11.3	-11.1	-10.8	-10.8	-10.5	-10.3	-10.2
-10.5	-10.7	-10.5	-10.5	-10.2	-10.3	-10.2	-10.0	-10.2	-10.0	-9.8	-9.6	-9.7	-9.6	-9.7	-9.6	-9.8	-9.5	-9.7	-10.1	-10.3	-9.5	-9.7	-10.0	-10.3	-10.3	-10.5	-10.5	-10.5	-10.5	-10.5	-10.4	-10.6	-10.6	-10.5	-10.7
-10.9	-11.0	-10.8	-10.8	-10.6	-10.4	-10.2	-10.1	-10.0	-9.8	-9.4	-9.9	-9.9	-9.6	-9.4	-9.6	-9.7	-9.4	-9.6	-10.0	-10.1	-8.9	-9.4	-9.7	-10.0	-10.1	-10.2	-10.4	-10.3	-10.4	-10.3	-9.9	-10.1	-10.6	-10.5	-10.8
-9.9	-10.1	-10.1	-9.8	-9.7	-9.4	-9.2	-9.1	-9.0	-9.3	-8.1	-8.3	-8.9	-7.9	-8.2	-8.5	-8.6	-8.6	-8.9	-8.6	-8.1	-7.6	-8.4	-8.6	-9.2	-9.7	-9.7	-9.9	-9.7	-9.8	-9.5	-9.2	-9.3	-9.7	-9.6	-9.9
-5.2	-5.8	-6.4	-6.7	-6.9	-6.1	-5.7	-5.7	-5.7	-6.2	-6.5	-5.3	-6.6	-6.2	-5.7	-5.1	-4.9	-5.0	-5.5	-5.7	-5.2	-6.1	-6.0	-5.7	-5.8	-6.2	-6.0	-6.4	-5.9	-5.7	-4.5	-4.1	-4.3	-5.3	-5.4	-4.9
.2	-.1	-.4	-.5	-.7	.0	.4	.0	-.1	-.9	-.8	-1.2	-1.9	-2.1	-1.1	-.7	.0	-.3	-.8	-1.5	-2.0	-3.0	-2.6	-1.8	-1.2	-.9	-.4	-.6	-.6	-.4	.1	.3	1.0	-.4	-.2	.4
3.4	3.5	3.8	3.9	3.8	4.2	4.2	4.1	4.4	4.1	4.4	4.0	3.5	3.9	4.4	4.2	4.3	4.0	3.8	3.3	3.0	2.8	3.1	3.4	3.8	4.3	4.2	4.2	3.9	3.6	3.1	3.1	3.3	3.2	3.1	3.7
7.1	7.3	7.4	7.2	7.0	6.8	6.8	6.9	7.3	7.6	7.5	7.8	8.4	9.2	9.4	9.4	9.3	9.3	9.5	9.8	9.9	9.8	9.9	9.9	10.1	10.5	10.2	9.8	9.0	8.6	8.0	7.5	7.5	7.6	7.1	7.1
13.4	12.8	11.9	11.5	11.4	11.2	11.0	11.0	11.4	11.8	12.0	12.8	13.4	13.7	14.2	14.7	14.7	14.9	15.8	16.6	17.0	17.1	18.1	19.0	18.4	17.8	18.3	17.7	16.5	16.3	15.2	15.7	14.9	14.3	14.2	14.0
19.8	18.5	17.4	16.9	17.4	17.7	17.7	17.8	18.2	18.5	18.5	19.2	17.8	17.5	17.4	18.0	19.7	22.1	24.5	26.0	26.3	27.6	29.0	30.6	26.6	26.2	28.2	27.4	27.8	29.1	29.3	29.1	27.5	26.0	22.5	21.0
22.9	22.7	22.6	22.7	22.7	22.7	23.2	24.3	25.4	25.4	24.1	23.5	23.6	23.7	24.5	25.7	27.2	28.9	30.0	31.7	32.9	34.1	34.9	35.5	35.7	35.3	34.4	33.8	33.1	32.6	31.6	30.4	28.8	27.2	25.0	23.8

Figure 29. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS15 (700 hPa)
NOAA15, using all observations



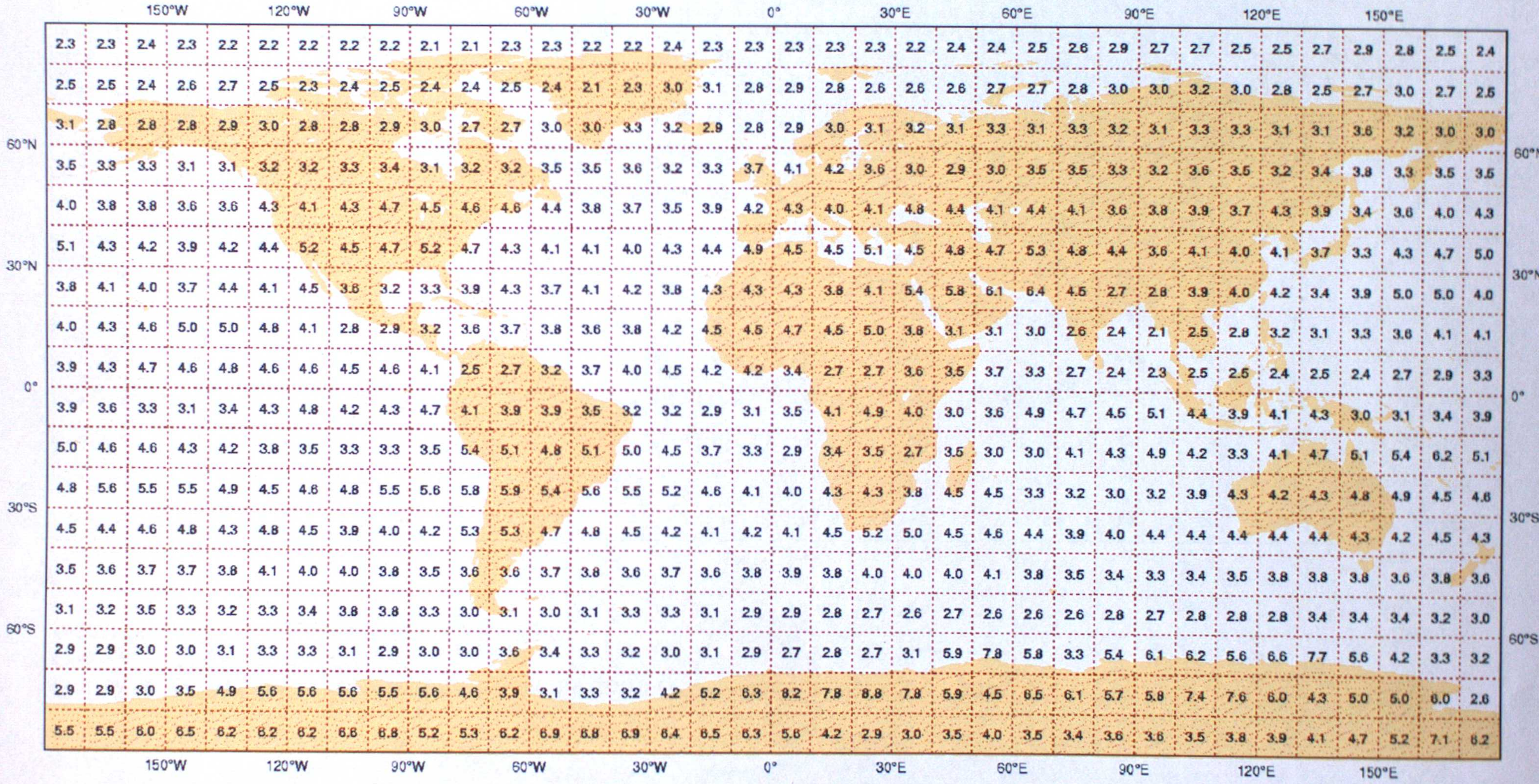
2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	1.9	2.0	2.0	1.9	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1
2.0	2.1	2.2	2.3	2.3	2.3	2.4	2.2	2.2	2.3	2.1	2.0	2.2	2.2	2.3	2.5	2.5	2.3	2.2	2.2	2.1	2.1	2.2	2.4	2.6	2.9	3.2	3.3	3.3	3.2	3.0	2.7	2.8	2.7	2.4	2.2
2.8	2.7	3.0	3.0	3.1	3.3	3.3	3.2	3.0	2.8	2.9	2.7	2.7	2.7	2.9	2.7	2.7	2.8	3.0	3.2	3.3	3.5	3.8	3.8	3.7	3.5	3.4	3.5	3.7	3.8	3.7	3.7	3.8	3.9	3.7	3.3
2.9	2.9	3.0	2.9	3.0	3.8	3.9	3.7	3.6	3.6	3.6	3.5	3.2	3.0	2.9	3.0	3.2	3.2	3.3	3.5	3.5	3.6	3.9	3.9	3.7	3.6	3.5	3.6	3.6	3.6	3.6	3.4	3.2	2.8	2.9	3.0
3.4	3.4	3.6	3.6	3.6	4.3	4.3	4.3	4.0	3.8	3.8	3.4	3.4	3.4	3.3	3.4	3.4	3.6	3.7	3.7	3.6	3.5	3.7	4.1	4.3	4.2	4.4	4.4	4.3	3.8	3.7	3.3	3.2	3.3	3.6	3.5
3.3	3.4	3.5	3.5	3.6	3.8	3.9	4.1	3.7	3.7	3.4	3.3	3.4	3.4	3.4	3.5	3.7	4.1	4.3	3.6	3.6	3.9	4.3	4.1	4.3	4.8	4.5	4.2	3.7	3.6	3.5	3.4	3.4	3.4	3.4	3.3
3.4	3.4	3.5	3.4	3.5	3.2	3.4	3.8	3.5	3.5	3.4	3.4	3.4	3.5	3.4	3.4	4.0	4.2	4.2	3.8	3.7	3.6	4.1	3.9	3.8	3.5	3.4	3.5	3.3	3.4	3.4	3.4	3.4	3.5	3.4	3.5
3.4	3.4	3.4	3.3	3.4	3.2	3.4	3.5	3.4	3.5	3.4	3.5	3.4	3.4	3.3	3.4	3.7	4.0	4.0	3.9	3.9	3.8	3.9	3.8	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.5
3.4	3.4	3.4	3.3	3.4	3.3	3.3	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.2	3.4	3.4	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.5	3.4	3.5	3.4	3.3	3.5	3.4	3.4	3.4	3.3
3.5	3.4	3.4	3.4	3.3	3.3	3.4	3.3	3.3	3.3	3.4	3.5	3.4	3.5	3.3	3.4	3.2	3.4	3.3	3.4	3.6	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.4	3.4	3.4	3.5	3.4
3.4	3.4	3.4	3.5	3.4	3.5	3.4	3.3	3.3	3.3	3.7	4.0	3.6	3.4	3.5	3.5	3.3	3.4	3.2	3.4	3.3	3.3	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.4	3.4
4.0	3.9	3.8	3.8	3.7	3.7	3.8	3.9	4.0	3.8	4.0	4.6	3.9	3.7	3.9	3.8	3.7	3.7	3.6	3.7	3.5	3.4	3.4	3.6	3.6	3.6	3.6	3.6	3.6	3.8	3.8	3.5	3.8	3.8	3.7	3.8
3.4	3.6	3.8	4.0	3.9	3.8	3.8	4.0	4.1	4.3	4.5	4.5	4.2	4.3	4.2	3.9	3.7	3.7	3.8	3.6	3.5	3.7	3.6	3.6	3.7	3.6	3.5	3.6	3.6	3.6	3.4	3.2	3.4	3.5	3.5	3.5
3.5	3.5	3.6	3.7	3.8	3.7	3.5	3.4	3.4	3.5	3.8	3.8	3.8	4.2	4.0	4.0	4.1	4.0	3.9	3.9	4.0	4.1	4.2	4.1	4.2	4.1	3.9	3.8	3.7	3.6	3.5	3.4	3.4	3.5	3.4	3.5
4.0	3.8	3.8	3.8	3.6	3.8	3.9	3.7	3.5	3.5	3.5	3.6	3.8	4.0	4.1	4.3	4.2	4.2	4.5	4.4	4.1	4.3	4.4	4.0	4.2	4.2	4.0	3.8	4.2	4.0	3.7	3.9	4.1	4.0	3.7	3.8
4.7	4.5	4.5	4.3	4.2	4.5	4.5	4.2	4.2	4.2	4.1	4.3	4.4	4.3	4.4	4.4	4.4	4.3	4.1	3.9	3.9	4.2	4.9	5.4	4.8	4.2	4.8	5.1	5.2	5.2	5.7	6.1	5.5	4.9	4.6	4.8
3.4	3.8	4.1	4.4	4.7	4.9	4.9	4.8	4.7	4.6	4.2	3.9	4.0	4.1	4.2	4.4	4.4	4.0	4.3	4.1	4.5	4.0	3.2	2.4	3.6	3.7	3.2	3.0	3.7	3.9	3.2	2.3	2.7	2.8	3.0	2.9
4.0	4.2	4.7	5.1	4.9	4.8	4.7	4.6	4.7	3.8	4.0	4.5	4.8	4.7	4.6	4.2	3.9	3.8	3.4	2.5	1.7	1.6	1.6	1.6	1.6	1.7	2.1	2.1	2.0	2.1	2.2	2.4	2.8	3.2	4.1	4.1

Figure 30. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS11 (500 - 700 hPa)
NOAA15, using all observations



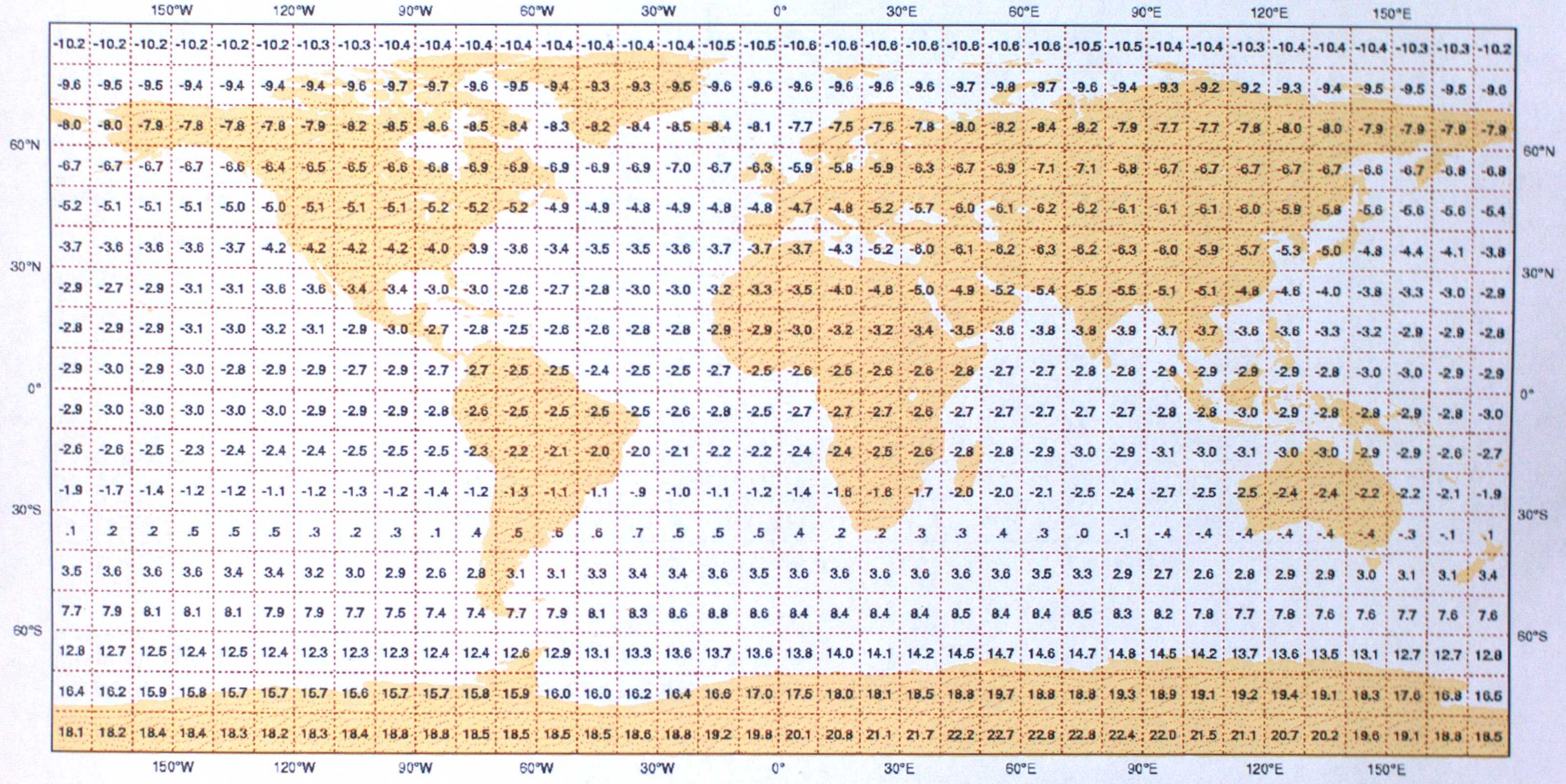
-.5	-.4	-.5	-.4	-.3	-.2	-.1	.2	.3	.1	.1	-.1	.0	.2	.1	-.3	-.4	-.5	-.7	-.7	-.6	-.5	-.5	-.5	-.5	-.7	-1.0	-1.0	-.9	-.9	-1.1	-1.2	-1.1	-1.0	-.9	-.7
-1.2	-.9	-.8	-1.0	-1.2	-1.1	-.7	-.7	-.7	-.6	-.5	-.6	-.5	.4	.5	-1.3	-2.0	-1.8	-1.8	-1.9	-1.5	-1.4	-1.6	-1.5	-1.7	-1.9	-2.4	-2.3	-2.5	-2.4	-2.2	-1.7	-1.6	-1.6	-1.3	-1.2
-1.8	-1.2	-.7	-1.0	-1.7	-2.0	-1.8	-1.7	-1.5	-1.4	-1.2	-1.2	-1.4	-1.1	-1.5	-1.9	-1.7	-2.0	-1.9	-1.9	-2.3	-2.0	-1.9	-1.6	-2.2	-2.9	-3.3	-3.3	-3.3	-3.2	-2.5	-2.4	-2.2	-2.2	-1.6	-1.6
-2.8	-2.8	-2.5	-2.1	-2.1	-2.5	-3.2	-3.6	-3.1	-2.9	-2.8	-2.4	-2.7	-3.1	-3.5	-2.7	-2.9	-3.8	-5.3	-5.6	-4.4	-3.2	-2.5	-2.5	-3.2	-3.5	-3.0	-2.7	-3.9	-3.9	-3.0	-3.3	-4.1	-3.7	-3.4	-3.2
-3.7	-2.6	-2.8	-3.0	-3.8	-6.8	-7.6	-7.0	-7.2	-6.5	-6.0	-5.5	-5.0	-4.8	-4.3	-4.4	-4.8	-6.1	-6.5	-6.4	-5.9	-7.6	-6.7	-6.9	-7.6	-5.7	-4.8	-5.2	-4.9	-4.5	-5.0	-4.8	-4.4	-4.2	-3.9	-3.9
-6.1	-4.5	-4.3	-5.7	-8.3	-11.2	-8.0	-6.6	-7.0	-7.0	-5.3	-5.7	-7.1	-8.4	-8.6	-9.5	-10.9	-9.1	-8.6	-11.0	-14.1	-16.9	-16.9	-14.5	-15.7	-8.8	-6.8	-5.9	-6.3	-5.8	-5.1	-4.1	-3.5	-4.6	-5.5	-5.6
-8.0	-7.8	-9.0	-10.5	-10.2	-10.1	-7.8	-5.1	-4.6	-4.3	-4.8	-6.9	-10.0	-11.1	-12.5	-12.3	-11.5	-11.1	-12.3	-14.7	-17.1	-16.0	-12.4	-11.5	-10.2	-5.4	-3.4	-3.7	-5.2	-5.1	-6.3	-7.0	-6.3	-5.5	-6.8	-7.7
-7.8	-10.0	-10.9	-11.2	-9.2	-6.7	-4.3	-2.8	-3.2	-4.1	-5.9	-5.6	-7.8	-9.3	-8.7	-7.2	-6.4	-6.7	-6.8	-7.6	-5.8	-3.4	-4.5	-5.0	-4.3	-2.7	-2.3	-1.5	-2.4	-2.7	-2.6	-3.0	-3.8	-4.2	-6.8	-7.6
-5.7	-7.0	-8.0	-8.5	-8.3	-7.1	-6.6	-5.8	-5.0	-3.9	-2.7	-3.3	-5.0	-5.0	-4.9	-5.7	-6.2	-5.5	-4.1	-3.5	-3.1	-3.8	-8.1	-8.1	-5.1	-3.5	-2.8	-2.3	-2.6	-3.1	-2.7	-2.2	-2.6	-2.9	-3.7	-4.4
-10.4	-13.1	-15.3	-16.5	-17.1	-16.4	-15.7	-15.2	-13.9	-11.6	-6.2	-5.7	-6.8	-9.4	-10.7	-12.5	-13.1	-12.7	-12.5	-12.2	-10.8	-10.3	-11.6	-11.8	-7.7	-5.4	-4.7	-5.7	-7.9	-8.6	-7.4	-4.7	-3.3	-3.1	-4.4	-6.8
-10.2	-11.0	-12.6	-14.6	-15.3	-15.2	-15.5	-16.3	-16.6	-16.3	-13.0	-12.3	-12.4	-12.3	-13.6	-14.0	-14.8	-15.7	-16.6	-15.9	-15.4	-14.3	-13.2	-13.8	-14.2	-13.8	-13.9	-13.8	-14.5	-14.7	-14.0	-13.7	-11.9	-9.5	-8.9	-9.8
-8.8	-6.6	-5.8	-6.5	-6.3	-6.7	-7.7	-8.3	-9.3	-11.2	-13.0	-11.9	-11.9	-11.0	-10.7	-10.4	-9.5	-10.5	-12.2	-13.8	-12.7	-13.7	-11.7	-11.2	-13.2	-13.6	-13.2	-12.9	-12.2	-12.6	-11.4	-10.8	-10.1	-9.4	-9.3	-9.7
-4.9	-4.6	-4.4	-3.9	-3.3	-4.1	-3.3	-2.3	-2.2	-2.7	-3.6	-4.9	-5.2	-4.7	-4.1	-3.6	-3.3	-4.0	-5.3	-6.3	-6.3	-7.6	-7.7	-6.7	-7.5	-7.7	-6.9	-6.9	-7.1	-6.7	-6.5	-5.8	-4.7	-4.3	-4.9	-4.7
-1.6	-2.1	-2.1	-1.7	-1.8	-1.9	-1.6	-.7	-.7	-1.2	-.2	-.8	-1.2	-.9	-.9	-.8	-.7	-.9	-1.2	-1.7	-1.8	-2.0	-2.1	-1.8	-1.1	-.4	-.4	-.3	-.5	-1.3	-2.2	-2.4	-2.2	-1.7	-2.0	-1.5
1.0	.9	.4	.4	.1	.2	-.1	.0	.2	.6	1.1	1.1	1.2	1.6	1.5	2.0	2.3	2.1	2.4	2.7	2.6	2.7	2.8	2.9	3.0	3.2	2.9	2.6	2.4	2.2	1.7	1.1	1.1	1.0	1.0	1.3
4.5	4.2	3.7	3.4	3.3	3.0	3.0	3.2	3.3	3.4	3.7	4.4	4.3	4.4	4.9	5.2	5.2	5.5	6.4	7.1	7.3	7.4	9.2	11.1	9.4	8.0	9.1	9.2	8.8	7.6	8.1	8.9	7.3	5.7	5.3	5.0
9.6	8.5	7.9	7.8	9.0	9.6	9.5	9.6	10.5	10.8	10.5	11.5	8.8	8.4	8.2	9.5	12.3	17.0	22.0	24.5	24.1	26.7	29.5	31.7	22.4	21.4	25.6	25.1	27.1	28.1	30.8	30.7	28.2	25.2	16.1	11.4
15.0	14.8	14.6	15.3	15.6	15.9	17.1	19.5	21.7	21.5	18.5	17.5	18.1	18.4	20.1	22.8	25.6	29.2	31.7	34.9	36.8	38.2	38.8	39.1	39.3	38.1	36.8	36.4	36.2	36.2	34.5	31.9	28.6	24.7	19.1	16.1

Figure 31. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS11 (500 - 700 hPa)
NOAA15, using all observations



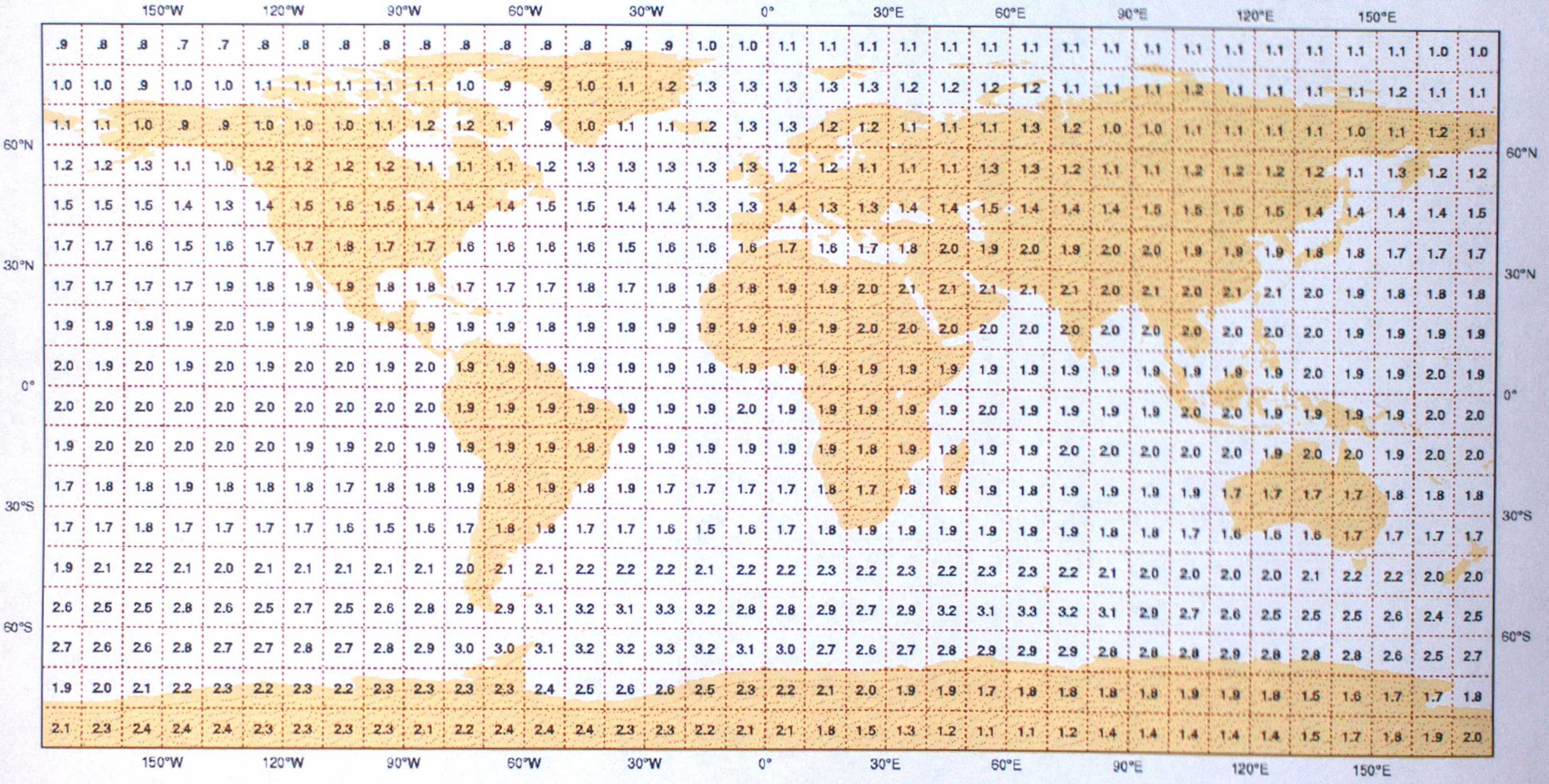
2.3	2.3	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.3	2.3	2.2	2.2	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.4	2.4	2.5	2.6	2.9	2.7	2.7	2.5	2.5	2.7	2.9	2.8	2.5	2.4
2.5	2.5	2.4	2.6	2.7	2.5	2.3	2.4	2.5	2.4	2.4	2.5	2.4	2.1	2.3	3.0	3.1	2.8	2.9	2.8	2.6	2.6	2.6	2.7	2.7	2.8	3.0	3.0	3.2	3.0	2.8	2.5	2.7	3.0	2.7	2.5
3.1	2.8	2.8	2.8	2.9	3.0	2.8	2.8	2.9	3.0	2.7	2.7	3.0	3.0	3.3	3.2	2.9	2.8	2.9	3.0	3.1	3.2	3.1	3.3	3.1	3.3	3.2	3.1	3.3	3.3	3.1	3.1	3.6	3.2	3.0	3.0
3.5	3.3	3.3	3.1	3.1	3.2	3.2	3.3	3.4	3.1	3.2	3.2	3.5	3.5	3.6	3.2	3.3	3.7	4.1	4.2	3.6	3.0	2.9	3.0	3.5	3.5	3.3	3.2	3.6	3.5	3.2	3.4	3.8	3.3	3.5	3.5
4.0	3.8	3.8	3.6	3.6	4.3	4.1	4.3	4.7	4.5	4.6	4.6	4.4	3.8	3.7	3.5	3.9	4.2	4.3	4.0	4.1	4.8	4.4	4.1	4.4	4.1	3.6	3.8	3.9	3.7	4.3	3.9	3.4	3.6	4.0	4.3
5.1	4.3	4.2	3.9	4.2	4.4	5.2	4.5	4.7	5.2	4.7	4.3	4.1	4.1	4.0	4.3	4.4	4.9	4.5	4.5	5.1	4.5	4.8	4.7	5.3	4.8	4.4	3.6	4.1	4.0	4.1	3.7	3.3	4.3	4.7	5.0
3.8	4.1	4.0	3.7	4.4	4.1	4.5	3.6	3.2	3.3	3.9	4.3	3.7	4.1	4.2	3.8	4.3	4.3	4.3	3.8	4.1	5.4	5.8	6.1	6.4	4.5	2.7	2.8	3.9	4.0	4.2	3.4	3.9	5.0	5.0	4.0
4.0	4.3	4.6	5.0	5.0	4.8	4.1	2.8	2.9	3.2	3.6	3.7	3.8	3.6	3.8	4.2	4.5	4.5	4.7	4.5	5.0	3.8	3.1	3.1	3.0	2.6	2.4	2.1	2.5	2.8	3.2	3.1	3.3	3.6	4.1	4.1
3.9	4.3	4.7	4.6	4.8	4.6	4.6	4.5	4.6	4.1	2.5	2.7	3.2	3.7	4.0	4.5	4.2	4.2	3.4	2.7	2.7	3.6	3.5	3.7	3.3	2.7	2.4	2.3	2.5	2.5	2.4	2.5	2.4	2.7	2.9	3.3
3.9	3.6	3.3	3.1	3.4	4.3	4.8	4.2	4.3	4.7	4.1	3.9	3.9	3.5	3.2	3.2	2.9	3.1	3.5	4.1	4.9	4.0	3.0	3.6	4.9	4.7	4.5	5.1	4.4	3.9	4.1	4.3	3.0	3.1	3.4	3.9
5.0	4.6	4.6	4.3	4.2	3.8	3.5	3.3	3.3	3.5	5.4	5.1	4.8	5.1	5.0	4.5	3.7	3.3	2.9	3.4	3.5	2.7	3.5	3.0	3.0	4.1	4.3	4.9	4.2	3.3	4.1	4.7	5.1	5.4	6.2	5.1
4.8	5.6	5.5	5.5	4.9	4.5	4.6	4.8	5.5	5.6	5.8	5.9	5.4	5.6	5.5	5.2	4.6	4.1	4.0	4.3	4.3	3.8	4.5	4.5	3.3	3.2	3.0	3.2	3.9	4.3	4.2	4.3	4.8	4.9	4.5	4.6
4.5	4.4	4.6	4.8	4.3	4.8	4.5	3.9	4.0	4.2	5.3	5.3	4.7	4.8	4.5	4.2	4.1	4.2	4.1	4.5	5.2	5.0	4.5	4.6	4.4	3.9	4.0	4.4	4.4	4.4	4.4	4.4	4.3	4.2	4.5	4.3
3.5	3.6	3.7	3.7	3.8	4.1	4.0	4.0	3.8	3.5	3.6	3.6	3.7	3.8	3.6	3.7	3.6	3.8	3.9	3.8	4.0	4.0	4.0	4.1	3.8	3.5	3.4	3.3	3.4	3.5	3.8	3.8	3.8	3.6	3.8	3.6
3.1	3.2	3.5	3.3	3.2	3.3	3.4	3.8	3.8	3.3	3.0	3.1	3.0	3.1	3.3	3.3	3.1	2.9	2.9	2.8	2.7	2.6	2.7	2.6	2.6	2.6	2.8	2.7	2.8	2.8	2.8	3.4	3.4	3.4	3.2	3.0
2.9	2.9	3.0	3.0	3.1	3.3	3.3	3.1	2.9	3.0	3.0	3.6	3.4	3.3	3.2	3.0	3.1	2.9	2.7	2.8	2.7	3.1	5.9	7.8	5.8	3.3	5.4	6.1	6.2	5.6	6.6	7.7	5.6	4.2	3.3	3.2
2.9	2.9	3.0	3.5	4.9	5.6	5.6	5.6	5.5	5.6	4.6	3.9	3.1	3.3	3.2	4.2	5.2	6.3	8.2	7.8	8.8	7.8	5.9	4.5	6.5	6.1	5.7	5.8	7.4	7.6	6.0	4.3	5.0	5.0	6.0	2.6
5.5	5.5	6.0	6.5	6.2	6.2	6.2	6.6	6.8	5.2	5.3	6.2	6.9	6.8	6.9	6.4	6.5	6.3	5.6	4.2	2.9	3.0	3.5	4.0	3.5	3.4	3.6	3.6	3.5	3.8	3.9	4.1	4.7	5.2	7.1	6.2

Figure 32. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS4 (400 hPa)
NOAA15, using all observations



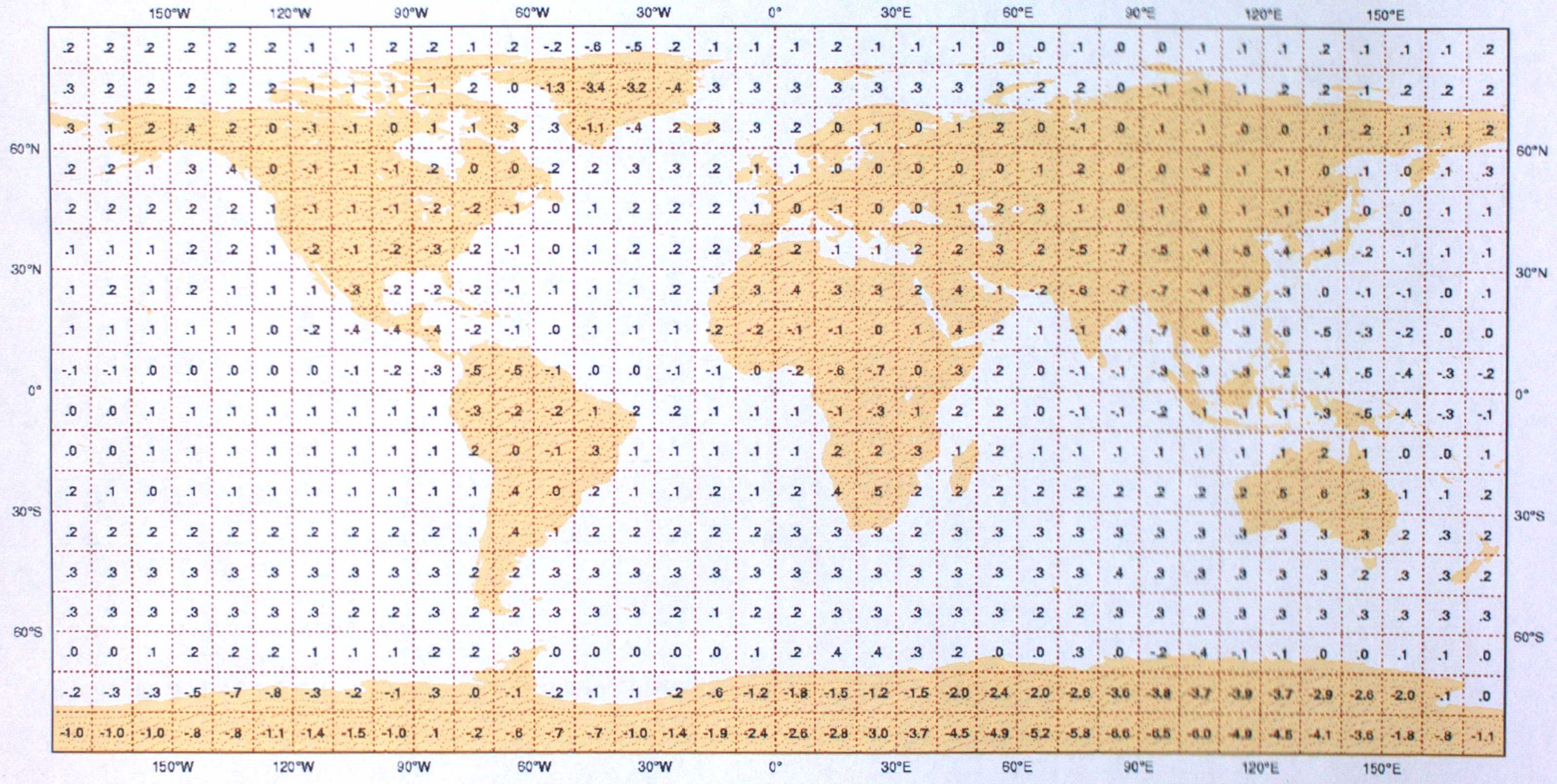
-10.2	-10.2	-10.2	-10.2	-10.2	-10.2	-10.3	-10.3	-10.4	-10.4	-10.4	-10.4	-10.4	-10.4	-10.4	-10.4	-10.5	-10.5	-10.6	-10.6	-10.6	-10.6	-10.6	-10.6	-10.6	-10.5	-10.5	-10.4	-10.4	-10.3	-10.4	-10.4	-10.4	-10.3	-10.3	-10.2
-9.6	-9.5	-9.5	-9.4	-9.4	-9.4	-9.4	-9.6	-9.7	-9.7	-9.6	-9.5	-9.4	-9.3	-9.3	-9.5	-9.6	-9.6	-9.6	-9.6	-9.6	-9.6	-9.7	-9.8	-9.7	-9.6	-9.4	-9.3	-9.2	-9.2	-9.3	-9.4	-9.5	-9.5	-9.5	-9.6
-8.0	-8.0	-7.9	-7.8	-7.8	-7.8	-7.9	-8.2	-8.5	-8.6	-8.5	-8.4	-8.3	-8.2	-8.4	-8.5	-8.4	-8.1	-7.7	-7.5	-7.6	-7.8	-8.0	-8.2	-8.4	-8.2	-7.9	-7.7	-7.7	-7.8	-8.0	-8.0	-7.9	-7.9	-7.9	-7.9
-6.7	-6.7	-6.7	-6.7	-6.6	-6.4	-6.5	-6.5	-6.6	-6.8	-6.9	-6.9	-6.9	-6.9	-6.9	-7.0	-6.7	-6.3	-5.9	-5.8	-5.9	-6.3	-6.7	-6.9	-7.1	-7.1	-6.8	-6.7	-6.7	-6.7	-6.7	-6.7	-6.6	-6.7	-6.8	-6.8
-5.2	-5.1	-5.1	-5.1	-5.0	-5.0	-5.1	-5.1	-5.1	-5.2	-5.2	-5.2	-4.9	-4.9	-4.8	-4.9	-4.8	-4.8	-4.7	-4.8	-5.2	-5.7	-6.0	-6.1	-6.2	-6.2	-6.1	-6.1	-6.1	-6.0	-5.9	-5.8	-5.6	-5.6	-5.6	-5.4
-3.7	-3.6	-3.6	-3.6	-3.7	-4.2	-4.2	-4.2	-4.2	-4.0	-3.9	-3.6	-3.4	-3.5	-3.5	-3.6	-3.7	-3.7	-3.7	-4.3	-5.2	-6.0	-6.1	-6.2	-6.3	-6.2	-6.3	-6.0	-5.9	-5.7	-5.3	-5.0	-4.8	-4.4	-4.1	-3.8
-2.9	-2.7	-2.9	-3.1	-3.1	-3.6	-3.6	-3.4	-3.4	-3.0	-3.0	-2.6	-2.7	-2.8	-3.0	-3.0	-3.2	-3.3	-3.5	-4.0	-4.8	-5.0	-4.9	-5.2	-5.4	-5.5	-5.5	-5.1	-5.1	-4.8	-4.6	-4.0	-3.8	-3.3	-3.0	-2.9
-2.8	-2.9	-2.9	-3.1	-3.0	-3.2	-3.1	-2.9	-3.0	-2.7	-2.8	-2.5	-2.6	-2.6	-2.8	-2.8	-2.9	-2.9	-3.0	-3.2	-3.2	-3.4	-3.5	-3.6	-3.8	-3.8	-3.9	-3.7	-3.7	-3.6	-3.6	-3.3	-3.2	-2.9	-2.9	-2.8
-2.9	-3.0	-2.9	-3.0	-2.8	-2.9	-2.9	-2.7	-2.9	-2.7	-2.7	-2.5	-2.5	-2.4	-2.5	-2.5	-2.7	-2.5	-2.6	-2.5	-2.6	-2.6	-2.8	-2.7	-2.7	-2.8	-2.8	-2.9	-2.9	-2.9	-2.9	-2.8	-3.0	-3.0	-2.9	-2.9
-2.9	-3.0	-3.0	-3.0	-3.0	-3.0	-2.9	-2.9	-2.9	-2.8	-2.6	-2.5	-2.5	-2.5	-2.5	-2.6	-2.8	-2.5	-2.7	-2.7	-2.7	-2.6	-2.7	-2.7	-2.7	-2.7	-2.7	-2.8	-2.8	-3.0	-2.9	-2.8	-2.8	-2.9	-2.8	-3.0
-2.6	-2.6	-2.5	-2.3	-2.4	-2.4	-2.4	-2.5	-2.5	-2.5	-2.3	-2.2	-2.1	-2.0	-2.0	-2.1	-2.2	-2.2	-2.4	-2.4	-2.5	-2.6	-2.8	-2.8	-2.9	-3.0	-2.9	-3.1	-3.0	-3.1	-3.0	-3.0	-2.9	-2.9	-2.6	-2.7
-1.9	-1.7	-1.4	-1.2	-1.2	-1.1	-1.2	-1.3	-1.2	-1.4	-1.2	-1.3	-1.1	-1.1	-.9	-1.0	-1.1	-1.2	-1.4	-1.6	-1.6	-1.7	-2.0	-2.0	-2.1	-2.5	-2.4	-2.7	-2.5	-2.5	-2.4	-2.4	-2.2	-2.2	-2.1	-1.9
.1	.2	.2	.5	.5	.5	.3	.2	.3	.1	.4	.5	.6	.6	.7	.5	.5	.5	.4	.2	.2	.3	.3	.4	.3	.0	-.1	-.4	-.4	-.4	-.4	-.4	-.4	-.3	-.1	.1
3.5	3.6	3.6	3.6	3.4	3.4	3.2	3.0	2.9	2.6	2.8	3.1	3.1	3.3	3.4	3.4	3.6	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.3	2.9	2.7	2.6	2.8	2.9	2.9	3.0	3.1	3.1	3.4
7.7	7.9	8.1	8.1	8.1	7.9	7.9	7.7	7.5	7.4	7.4	7.7	7.9	8.1	8.3	8.6	8.8	8.6	8.4	8.4	8.4	8.4	8.5	8.4	8.4	8.5	8.3	8.2	7.8	7.7	7.8	7.6	7.6	7.7	7.6	7.6
12.8	12.7	12.5	12.4	12.5	12.4	12.3	12.3	12.3	12.4	12.4	12.6	12.9	13.1	13.3	13.6	13.7	13.6	13.8	14.0	14.1	14.2	14.5	14.7	14.6	14.7	14.8	14.5	14.2	13.7	13.6	13.5	13.1	12.7	12.7	12.8
16.4	16.2	15.9	15.8	15.7	15.7	15.7	15.6	15.7	15.7	15.8	15.9	16.0	16.0	16.2	16.4	16.6	17.0	17.5	18.0	18.1	18.5	18.8	19.7	18.8	18.8	19.3	18.9	19.1	19.2	19.4	19.1	18.3	17.6	16.8	16.5
18.1	18.2	18.4	18.4	18.3	18.2	18.3	18.4	18.8	18.8	18.5	18.5	18.5	18.5	18.6	18.8	19.2	19.8	20.1	20.8	21.1	21.7	22.2	22.7	22.8	22.8	22.4	22.0	21.5	21.1	20.7	20.2	19.6	19.1	18.8	18.5

Figure 33. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS4 (400 hPa)
NOAA15, using all observations



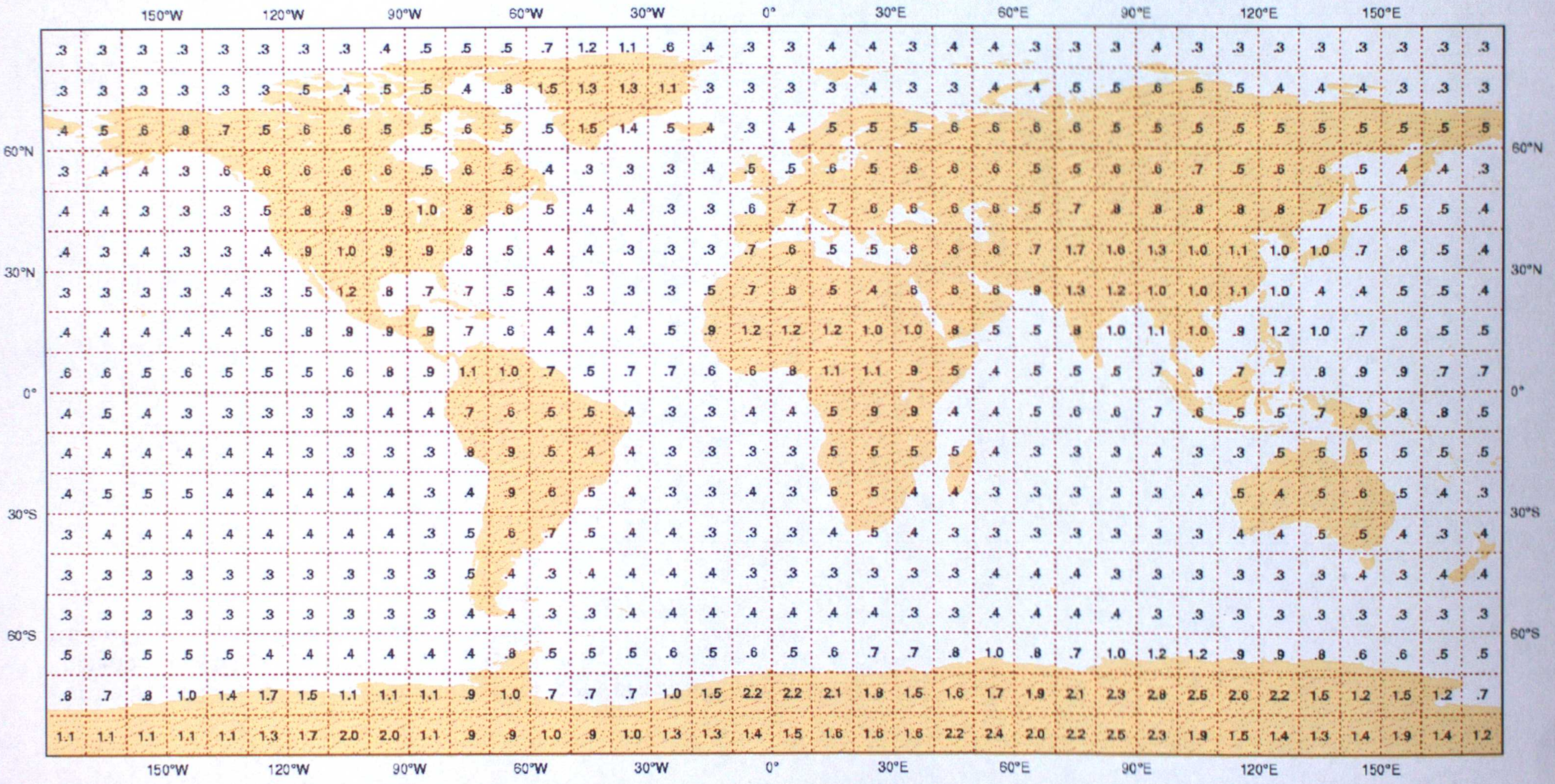
.9	.8	.8	.7	.7	.8	.8	.8	.8	.8	.8	.8	.8	.8	.9	.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0
1.0	1.0	.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.0	.9	.9	1.0	1.1	1.2	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.2	1.1	1.1
1.1	1.1	1.0	.9	.9	1.0	1.0	1.0	1.1	1.2	1.2	1.1	.9	1.0	1.1	1.1	1.2	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.3	1.2	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.1	1.2	1.1
1.2	1.2	1.3	1.1	1.0	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.2	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.3	1.3	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.1	1.3	1.2	1.2
1.5	1.5	1.5	1.4	1.3	1.4	1.5	1.6	1.5	1.4	1.4	1.4	1.5	1.5	1.4	1.4	1.3	1.3	1.4	1.3	1.3	1.4	1.4	1.5	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.5
1.7	1.7	1.6	1.5	1.6	1.7	1.7	1.8	1.7	1.7	1.6	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.7	1.6	1.7	1.8	2.0	1.9	2.0	1.9	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.7	1.7	1.7
1.7	1.7	1.7	1.7	1.9	1.8	1.9	1.9	1.8	1.8	1.7	1.7	1.7	1.8	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.1	2.1	2.0	1.9	1.8	1.8	1.8
1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9
2.0	1.9	2.0	1.9	2.0	1.9	2.0	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	2.0	1.9
2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0
1.9	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.9	1.9	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	1.9	2.0	2.0
1.7	1.8	1.8	1.9	1.8	1.8	1.8	1.7	1.8	1.8	1.9	1.8	1.9	1.8	1.9	1.7	1.7	1.7	1.7	1.8	1.7	1.8	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.7	1.7	1.7	1.7	1.8	1.8	1.8
1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.6	1.5	1.6	1.7	1.8	1.8	1.7	1.7	1.6	1.5	1.6	1.7	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.7	1.6	1.6	1.6	1.7	1.7	1.7	1.7
1.9	2.1	2.2	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.2	2.3	2.2	2.3	2.2	2.3	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.0	2.0
2.6	2.5	2.5	2.8	2.6	2.5	2.7	2.5	2.6	2.8	2.9	2.9	3.1	3.2	3.1	3.3	3.2	2.8	2.8	2.9	2.7	2.9	3.2	3.1	3.3	3.2	3.1	2.9	2.7	2.6	2.5	2.5	2.5	2.6	2.4	2.5
2.7	2.6	2.6	2.8	2.7	2.7	2.8	2.7	2.8	2.9	3.0	3.0	3.1	3.2	3.2	3.3	3.2	3.1	3.0	2.7	2.6	2.7	2.8	2.9	2.9	2.9	2.8	2.8	2.8	2.9	2.8	2.8	2.8	2.6	2.5	2.7
1.9	2.0	2.1	2.2	2.3	2.2	2.3	2.2	2.3	2.3	2.3	2.3	2.4	2.5	2.6	2.6	2.5	2.3	2.2	2.1	2.0	1.9	1.9	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.5	1.6	1.7	1.7	1.8
2.1	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.1	2.2	2.4	2.4	2.4	2.3	2.3	2.2	2.1	2.1	1.8	1.5	1.3	1.2	1.1	1.1	1.2	1.4	1.4	1.4	1.4	1.4	1.5	1.7	1.8	1.9	2.0

Figure 34. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-5 (700 hPa)
NOAA15, using all observations



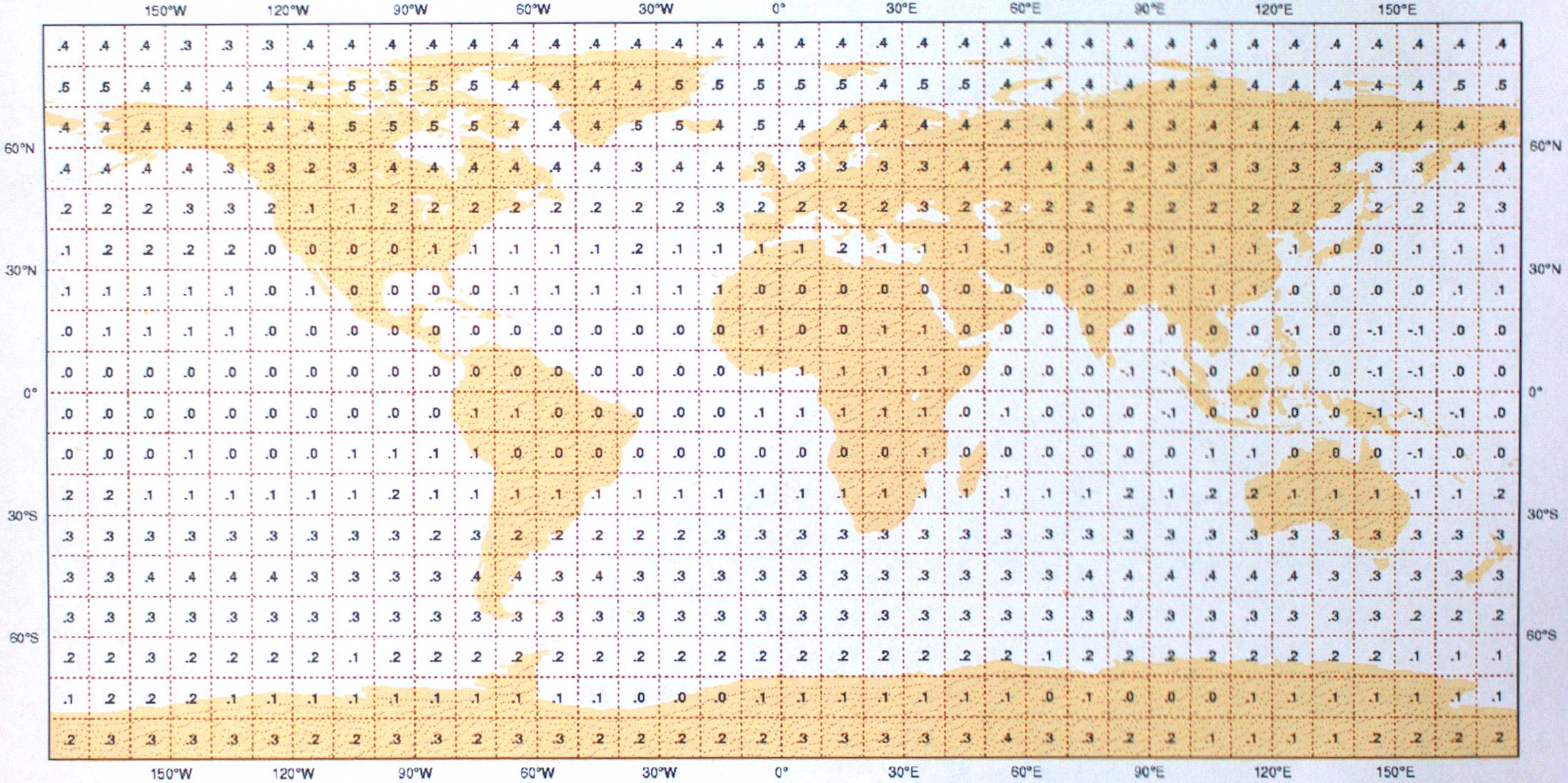
.2	.2	.2	.2	.2	.2	.1	.1	.2	.2	.1	.2	-.2	-.6	-.5	.2	.1	.1	.1	.2	.1	.1	.1	.0	.0	.1	.0	.0	.1	.1	.1	.2	.1	.1	.1	.2
.3	.2	.2	.2	.2	.2	.1	.1	.1	.1	.2	.0	-1.3	-3.4	-3.2	-.4	.3	.3	.3	.3	.3	.3	.3	.3	.2	.2	.0	-.1	-.1	.1	.2	.2	.1	.2	.2	.2
.3	.1	.2	.4	.2	.0	-.1	-.1	.0	.1	.1	.3	.3	-1.1	-.4	.2	.3	.3	.2	.0	.1	.0	.1	.2	.0	-.1	.0	.1	.1	.0	.0	.1	.2	.1	.1	.2
.2	.2	.1	.3	.4	.0	-.1	-.1	-.1	.2	.0	.0	.2	.2	.3	.3	.2	.1	.1	.0	.0	.0	.0	.0	.1	.2	.0	.0	-.2	.1	-.1	.0	.1	.0	.1	.3
.2	.2	.2	.2	.2	.1	-.1	.1	-.1	-.2	-.2	-.1	.0	.1	.2	.2	.2	.1	.0	-.1	.0	.0	.1	.2	.3	.1	.0	.1	.0	.1	-.1	-.1	.0	.0	.1	.1
.1	.1	.1	.2	.2	.1	-.2	-.1	-.2	-.3	-.2	-.1	.0	.1	.2	.2	.2	.2	.2	.1	.1	.2	.2	.3	.2	-.5	-.7	-.5	-.4	-.5	-.4	-.4	-.2	-.1	.1	.1
.1	.2	.1	.2	.1	.1	.1	-.3	-.2	-.2	-.2	-.1	.1	.1	.1	.2	.1	.3	.4	.3	.3	.2	.4	.1	-.2	-.6	-.7	-.7	-.4	-.5	-.3	.0	-.1	-.1	.0	.1
.1	.1	.1	.1	.1	.0	-.2	-.4	-.4	-.4	-.2	-.1	.0	.1	.1	.1	-.2	-.2	-.1	-.1	.0	.1	.4	.2	.1	-.1	-.4	-.7	-.6	-.3	-.6	-.5	-.3	-.2	.0	.0
-.1	-.1	.0	.0	.0	.0	.0	-.1	-.2	-.3	-.5	-.5	-.1	.0	.0	-.1	-.1	.0	-.2	-.6	-.7	.0	.3	.2	.0	-.1	-.1	-.3	-.3	-.3	-.2	-.4	-.5	-.4	-.3	-.2
.0	.0	.1	.1	.1	.1	.1	.1	.1	.1	-.3	-.2	-.2	.1	.2	.2	.1	.1	.1	-.1	-.3	.1	.2	.2	.0	-.1	-.1	-.2	-.1	-.1	-.1	-.3	-.5	-.4	-.3	-.1
.0	.0	.1	.1	.1	.1	.1	.1	.1	.1	.2	.0	-.1	.3	.1	.1	.1	.1	.1	.2	.2	.3	.1	.2	.1	.1	.1	.1	.1	.1	.1	.2	.1	.0	.0	.1
.2	.1	.0	.1	.1	.1	.1	.1	.1	.1	.1	.4	.0	.2	.1	.1	.2	.1	.2	.4	.5	.2	.2	.2	.2	.2	.2	.2	.2	.2	.5	.6	.3	.1	.1	.2
.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.1	.4	.1	.2	.2	.2	.2	.2	.3	.3	.3	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	.2
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3	.3	.3	.3	.2	.3	.3	.2
.3	.3	.3	.3	.3	.3	.3	.2	.2	.3	.2	.2	.3	.3	.3	.2	.1	.2	.2	.3	.3	.3	.3	.3	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.0	.0	.1	.2	.2	.2	.1	.1	.1	.2	.2	.3	.0	.0	.0	.0	.0	.1	.2	.4	.4	.3	.2	.0	.0	.3	.0	-.2	-.4	-.1	-.1	.0	.0	.1	.1	.0
-.2	-.3	-.3	-.5	-.7	-.8	-.3	-.2	-.1	.3	.0	-.1	-.2	.1	.1	-.2	-.6	-1.2	-1.8	-1.5	-1.2	-1.5	-2.0	-2.4	-2.0	-2.6	-3.6	-3.8	-3.7	-3.9	-3.7	-2.9	-2.6	-2.0	-.1	.0
-1.0	-1.0	-1.0	-.8	-.8	-1.1	-1.4	-1.5	-1.0	.1	-.2	-.6	-.7	-.7	-1.0	-1.4	-1.9	-2.4	-2.6	-2.8	-3.0	-3.7	-4.5	-4.9	-5.2	-5.8	-6.6	-6.5	-6.0	-4.9	-4.5	-4.1	-3.6	-1.8	-.8	-1.1

Figure 35. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-5 (700 hPa)
NOAA15, using all observations



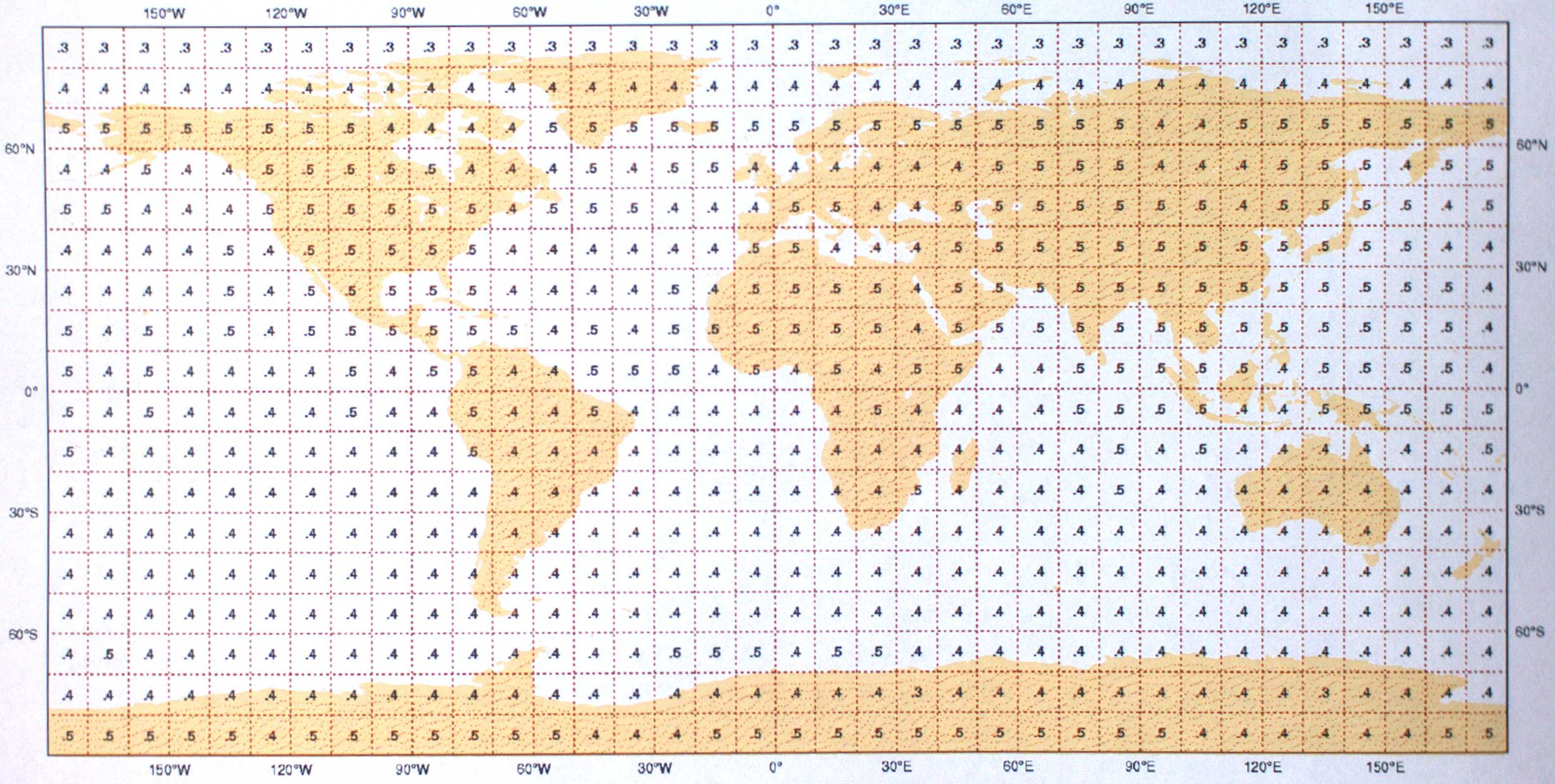
.3	.3	.3	.3	.3	.3	.3	.3	.4	.5	.5	.5	.7	1.2	1.1	.6	.4	.3	.3	.4	.4	.3	.4	.4	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.5	.4	.5	.5	.4	.8	1.5	1.3	1.3	1.1	.3	.3	.3	.3	.4	.3	.3	.4	.4	.5	.5	.6	.5	.5	.4	.4	.4	.3	.3	.3
.4	.5	.6	.8	.7	.5	.6	.6	.5	.5	.6	.5	.5	1.5	1.4	.5	.4	.3	.4	.5	.5	.5	.6	.6	.6	.6	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5
.3	.4	.4	.3	.6	.6	.6	.6	.6	.5	.6	.5	.4	.3	.3	.3	.4	.5	.5	.6	.5	.6	.6	.6	.5	.5	.6	.6	.7	.5	.6	.6	.5	.4	.4	.3
.4	.4	.3	.3	.3	.5	.8	.9	.9	1.0	.8	.6	.5	.4	.4	.3	.3	.6	.7	.7	.6	.6	.6	.6	.5	.7	.8	.8	.8	.8	.8	.7	.5	.5	.5	.4
.4	.3	.4	.3	.3	.4	.9	1.0	.9	.9	.8	.5	.4	.4	.3	.3	.3	.7	.6	.5	.5	.6	.6	.6	.7	1.7	1.6	1.3	1.0	1.1	1.0	1.0	.7	.6	.5	.4
.3	.3	.3	.3	.4	.3	.5	1.2	.8	.7	.7	.5	.4	.3	.3	.3	.5	.7	.6	.5	.4	.6	.6	.6	.9	1.3	1.2	1.0	1.0	1.1	1.0	.4	.4	.5	.5	.4
.4	.4	.4	.4	.4	.6	.8	.9	.9	.9	.7	.6	.4	.4	.4	.5	.9	1.2	1.2	1.2	1.0	1.0	.8	.5	.5	.8	1.0	1.1	1.0	.9	1.2	1.0	.7	.6	.5	.5
.6	.6	.5	.6	.5	.5	.5	.6	.8	.9	1.1	1.0	.7	.5	.7	.7	.6	.6	.8	1.1	1.1	.9	.5	.4	.5	.5	.5	.7	.8	.7	.7	.8	.9	.9	.7	.7
.4	.5	.4	.3	.3	.3	.3	.3	.4	.4	.7	.6	.5	.5	.4	.3	.3	.4	.4	.5	.9	.9	.4	.4	.5	.6	.6	.7	.6	.5	.5	.7	.9	.8	.8	.5
.4	.4	.4	.4	.4	.4	.3	.3	.3	.3	.8	.9	.5	.4	.4	.3	.3	.3	.3	.5	.5	.5	.5	.4	.3	.3	.3	.4	.3	.3	.5	.5	.5	.5	.5	.5
.4	.5	.5	.5	.4	.4	.4	.4	.4	.3	.4	.9	.6	.5	.4	.3	.3	.4	.3	.6	.5	.4	.4	.3	.3	.3	.3	.3	.4	.5	.4	.5	.6	.5	.4	.3
.3	.4	.4	.4	.4	.4	.4	.4	.4	.3	.5	.6	.7	.5	.4	.4	.3	.3	.3	.4	.5	.4	.3	.3	.3	.3	.3	.3	.3	.4	.4	.5	.5	.4	.3	.4
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.5	.4	.3	.4	.4	.4	.4	.3	.3	.3	.3	.3	.3	.4	.4	.4	.3	.3	.3	.3	.3	.3	.4	.3	.4	.4
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.3	.3	.4	.4	.4	.4	.4	.4	.4	.3	.3	.4	.4	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3
.5	.6	.5	.5	.5	.4	.4	.4	.4	.4	.4	.8	.5	.5	.5	.6	.5	.6	.5	.6	.7	.7	.8	1.0	.8	.7	1.0	1.2	1.2	.9	.9	.8	.6	.6	.5	.5
.8	.7	.8	1.0	1.4	1.7	1.5	1.1	1.1	1.1	.9	1.0	.7	.7	.7	1.0	1.5	2.2	2.2	2.1	1.8	1.5	1.6	1.7	1.9	2.1	2.3	2.8	2.5	2.6	2.2	1.5	1.2	1.5	1.2	.7
1.1	1.1	1.1	1.1	1.1	1.3	1.7	2.0	2.0	1.1	.9	.9	1.0	.9	1.0	1.3	1.3	1.4	1.5	1.6	1.6	1.6	2.2	2.4	2.0	2.2	2.5	2.3	1.9	1.5	1.4	1.3	1.4	1.9	1.4	1.2

Figure 36. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-7 (300 hPa)
NOAA15, using all observations



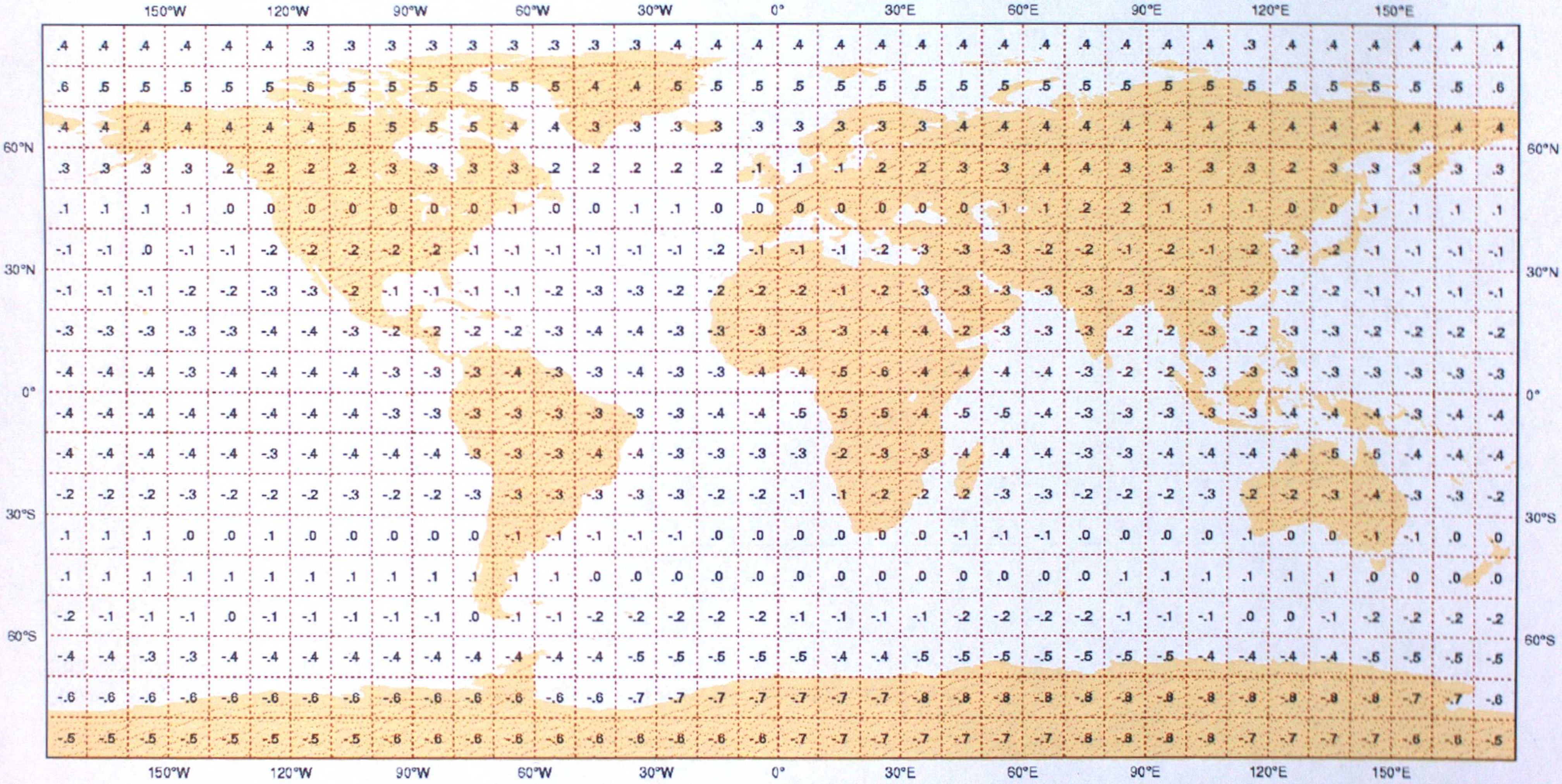
.4	.4	.4	.3	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.5	.5	.4	.4	.4	.4	.4	.5	.5	.5	.5	.4	.4	.4	.4	.5	.5	.5	.5	.5	.4	.5	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5
.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.5	.4	.4	.4	.5	.5	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.3	.3	.2	.3	.4	.4	.4	.4	.4	.4	.3	.4	.4	.3	.3	.3	.3	.3	.4	.4	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4
.2	.2	.2	.3	.3	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.3	.2	.2	.2	.2	.3	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.3
.1	.2	.2	.2	.2	.0	.0	.0	.0	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1	.2	.1	.1	.1	.1	.0	.1	.1	.1	.1	.1	.1	.0	.0	.1	.1	.1
.1	.1	.1	.1	.1	.0	.1	.0	.0	.0	.0	.1	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.0	.0	.0	.0	.1	.1
.0	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	-.1	.0	-.1	-.1	.0	.0
.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0	-.1	-.1	.0	.0	.0	.0	-.1	-.1	.0	.0
.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.1	.0	.0	.0	-.1	.0	.0	.0	.0	-.1	-.1	-.1	.0
.0	.0	.0	.1	.0	.0	.0	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	-.1	.0	.0
.2	.2	.1	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.2	.1	.2	.2	.1	.1	.1	.1	.1	.2
.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	.2	.2	.2	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.4	.4	.4	.4	.3	.3	.3	.3	.4	.4	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.4	.4	.4	.4	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.2	.2
.2	.2	.3	.2	.2	.2	.2	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.1	.2	.2	.2	.2	.2	.2	.2	.2	.1	.1	.1
.1	.2	.2	.2	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.0	.0	.0	.1	.1	.1	.1	.1	.1	.1	.0	.1	.0	.0	.0	.1	.1	.1	.1	.1	.1	.1
.2	.3	.3	.3	.3	.3	.2	.2	.3	.3	.2	.3	.3	.3	.2	.2	.2	.2	.2	.3	.3	.3	.3	.4	.3	.3	.2	.2	.1	.1	.1	.1	.2	.2	.2	.2

Figure 37. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-7 (300 hPa)
NOAA15, using all observations



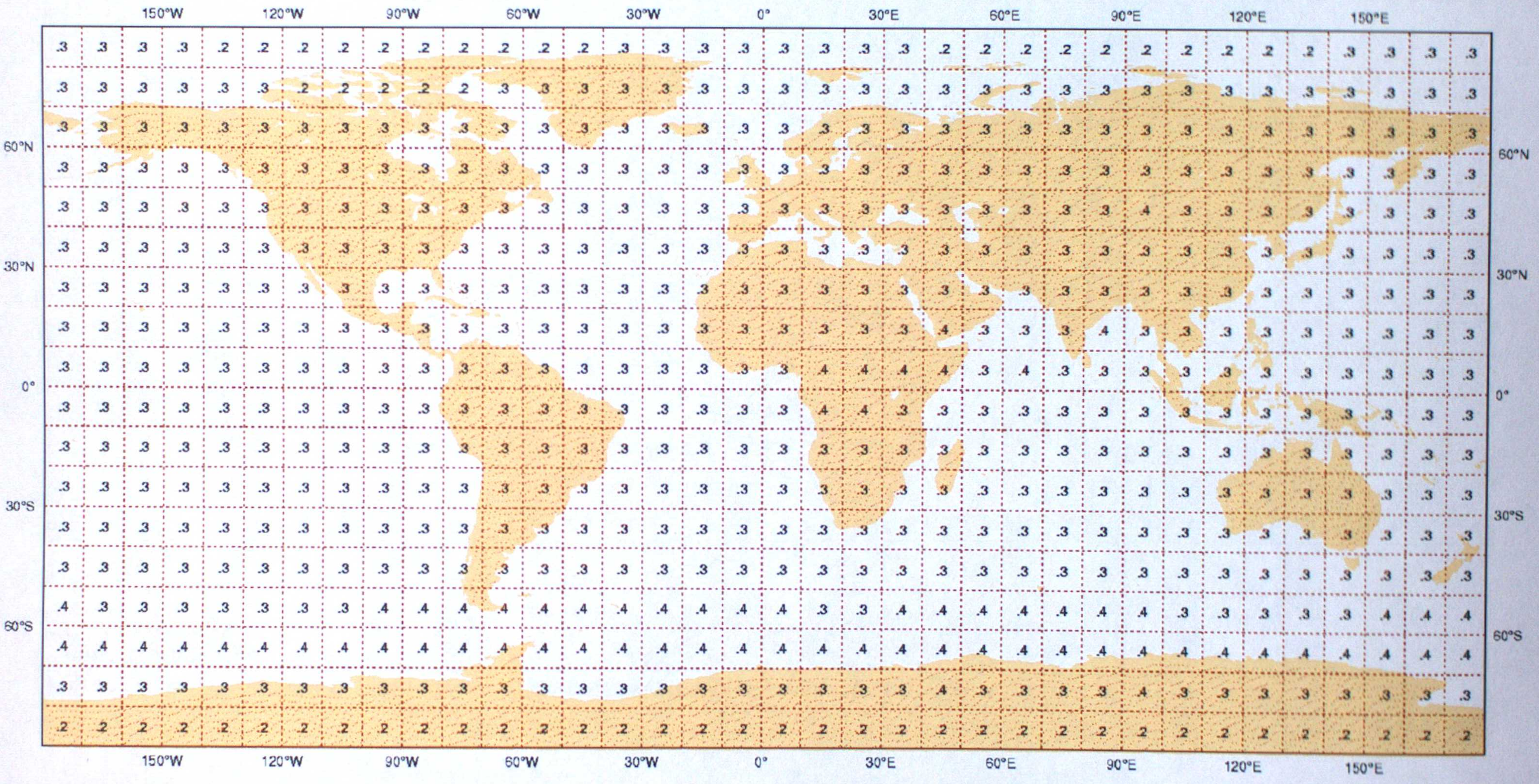
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.5	.5	.5	.5	.5	.5	.5	.5	.4	.4	.4	.4	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.4	.4	.5	.5	.5	.5	.5	.5	.5
.4	.4	.5	.4	.4	.5	.5	.5	.5	.5	.4	.4	.4	.5	.4	.5	.5	.4	.4	.4	.4	.4	.4	.5	.5	.5	.5	.4	.4	.4	.5	.5	.5	.4	.5	.5
.5	.5	.4	.4	.4	.5	.5	.5	.5	.5	.5	.4	.5	.5	.5	.4	.4	.4	.5	.5	.4	.4	.5	.5	.5	.5	.5	.5	.5	.4	.5	.5	.5	.5	.4	.5
.4	.4	.4	.4	.5	.4	.5	.5	.5	.5	.5	.4	.4	.4	.4	.4	.4	.5	.5	.4	.4	.4	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.4	.4
.4	.4	.4	.4	.5	.4	.5	.5	.5	.5	.5	.4	.4	.4	.4	.5	.4	.5	.5	.5	.5	.4	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.4
.5	.4	.5	.4	.5	.4	.5	.5	.5	.5	.5	.5	.4	.5	.4	.5	.5	.5	.5	.5	.5	.4	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.4
.5	.4	.5	.4	.4	.4	.4	.5	.4	.5	.5	.4	.4	.5	.5	.5	.4	.5	.4	.5	.4	.5	.5	.4	.4	.5	.5	.5	.5	.5	.4	.5	.5	.5	.5	.4
.5	.4	.5	.4	.4	.4	.4	.5	.4	.4	.5	.4	.4	.5	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.5	.5	.5	.5	.4	.4	.5	.5	.5	.5	.5
.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.5	.4	.4	.4	.4	.4	.4	.5
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.4	.5	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4
.5	.5	.5	.5	.5	.4	.5	.5	.5	.5	.5	.5	.5	.4	.4	.4	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.4	.4	.4	.4	.4	.4	.5	.5

Figure 38. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-9 (100 hPa)
NOAA15, using all observations



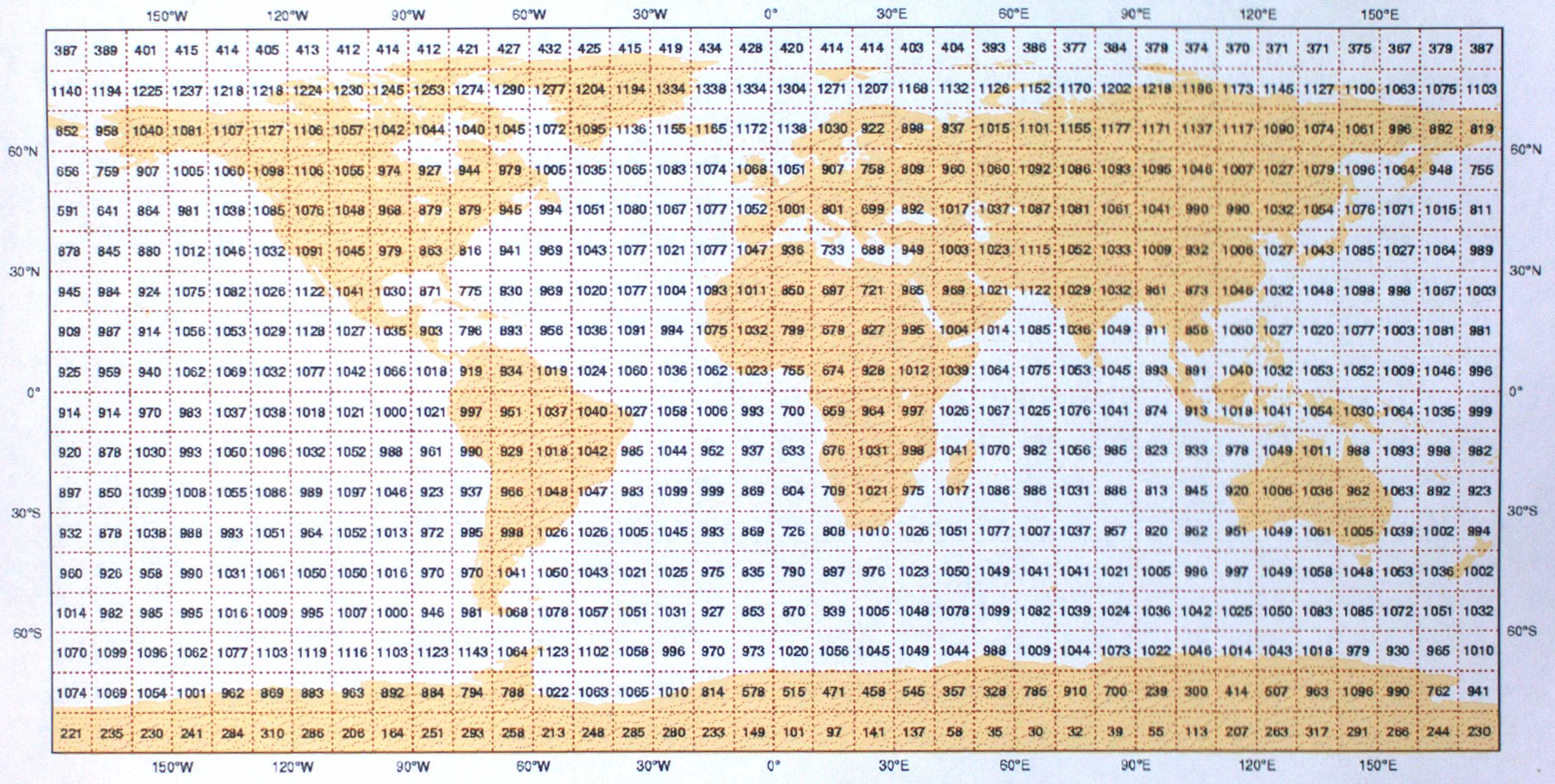
.4	.4	.4	.4	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4
.6	.5	.5	.5	.5	.5	.6	.5	.5	.5	.5	.5	.5	.4	.4	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.6
.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.5	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.3	.3	.3	.3	.2	.2	.2	.2	.3	.3	.3	.3	.2	.2	.2	.2	.2	.1	.1	.1	.2	.2	.3	.3	.4	.4	.3	.3	.3	.3	.2	.3	.3	.3	.3	.3
.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1	.2	2	.1	.1	.1	.0	.0	.1	.1	.1	.1
-.1	-.1	.0	-.1	-.1	-.2	-.2	-.2	-.2	-.2	-.1	-.1	-.1	-.1	-.1	-.1	-.2	-.1	-.1	-.1	-.2	-.3	-.3	-.3	-.2	-.2	-.1	-.2	-.1	-.2	-.2	-.2	-.1	-.1	-.1	-.1
-.1	-.1	-.1	-.2	-.2	-.3	-.3	-.2	-.1	-.1	-.1	-.1	-.2	-.3	-.3	-.2	-.2	-.2	-.2	-.1	-.2	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.2	-.2	-.2	-.1	-.1	-.1	-.1
-.3	-.3	-.3	-.3	-.3	-.4	-.4	-.3	-.2	-.2	-.2	-.2	-.3	-.4	-.4	-.3	-.3	-.3	-.3	-.3	-.4	-.4	-.2	-.3	-.3	-.3	-.2	-.2	-.3	-.2	-.3	-.3	-.2	-.2	-.2	-.2
-.4	-.4	-.4	-.3	-.4	-.4	-.4	-.4	-.3	-.3	-.3	-.4	-.3	-.3	-.4	-.3	-.3	-.4	-.4	-.5	-.6	-.4	-.4	-.4	-.4	-.3	-.2	-.2	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3
-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.4	-.4	-.5	-.5	-.5	-.4	-.5	-.5	-.4	-.3	-.3	-.3	-.3	-.3	-.4	-.4	-.4	-.3	-.4	-.4
-.4	-.4	-.4	-.4	-.4	-.3	-.4	-.4	-.4	-.4	-.3	-.3	-.3	-.4	-.4	-.3	-.3	-.3	-.3	-.2	-.3	-.3	-.4	-.4	-.4	-.3	-.3	-.4	-.4	-.4	-.4	-.5	-.5	-.4	-.4	-.4
-.2	-.2	-.2	-.3	-.2	-.2	-.2	-.3	-.2	-.2	-.3	-.3	-.3	-.3	-.3	-.3	-.2	-.2	-.1	-.1	-.2	-.2	-.2	-.3	-.3	-.2	-.2	-.2	-.3	-.2	-.2	-.3	-.4	-.3	-.3	-.2
.1	.1	.1	.0	.0	.1	.0	.0	.0	.0	.0	-.1	-.1	-.1	-.1	-.1	.0	.0	.0	.0	.0	.0	-.1	-.1	-.1	.0	.0	.0	.0	.1	.0	.0	-.1	-.1	.0	.0
.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.1	.0	.0	.0	.0
-.2	-.1	-.1	-.1	.0	-.1	-.1	-.1	-.1	-.1	.0	-.1	-.1	-.2	-.2	-.2	-.2	-.2	-.1	-.1	-.1	-.1	-.2	-.2	-.2	-.2	-.1	-.1	-.1	.0	.0	-.1	-.2	-.2	-.2	-.2
-.4	-.4	-.3	-.3	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.5	-.5	-.5	-.5	-.5	-.4	-.4	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.4	-.4	-.4	-.4	-.5	-.5	-.5	-.5
-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.7	-.7	-.6
-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.8	-.8	-.8	-.8	-.7	-.7	-.7	-.7	-.6	-.6	-.5

Figure 39. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-9 (100 hPa)
NOAA15, using all observations



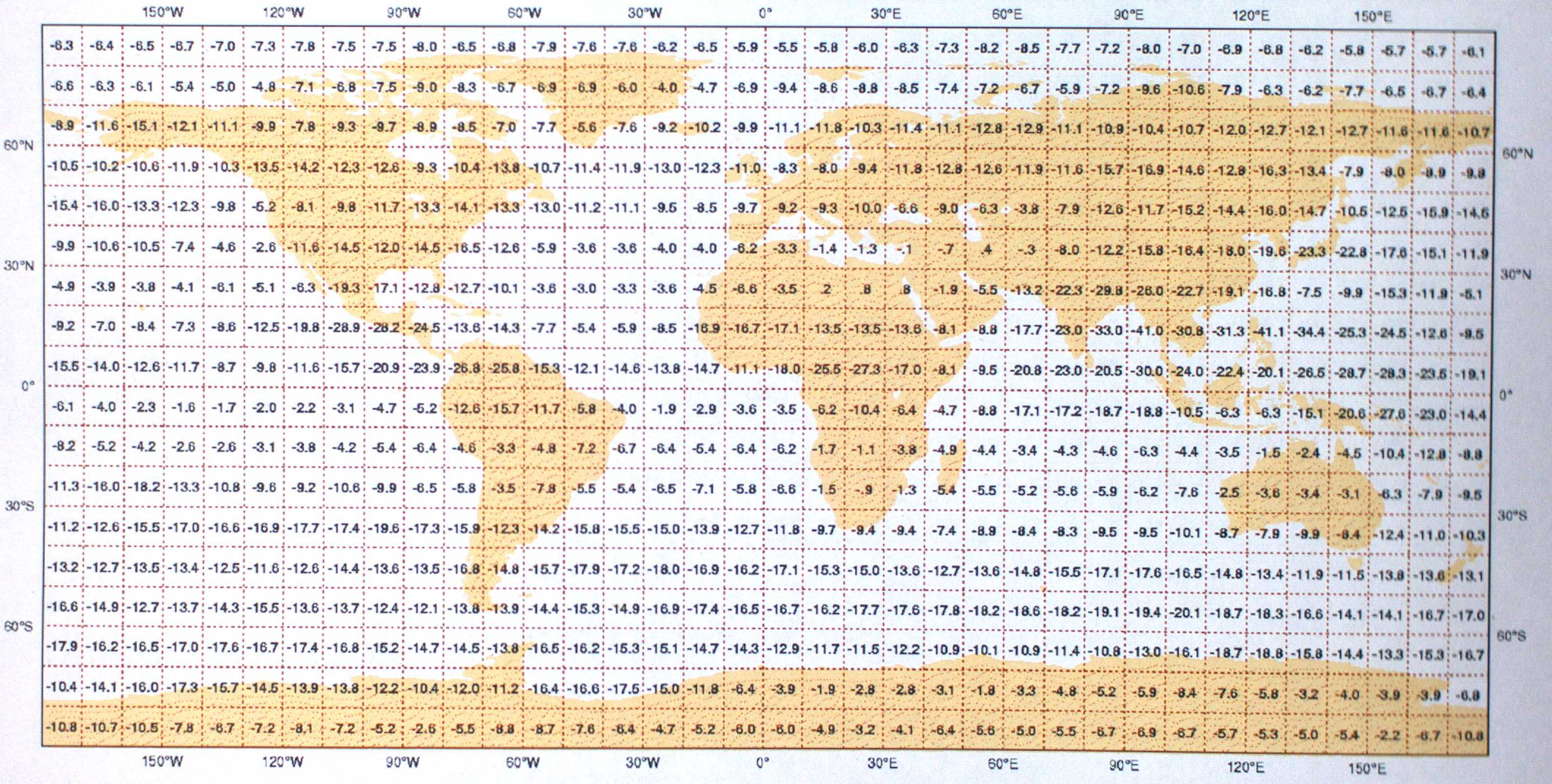
.3	.3	.3	.3	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.2	.2	.2	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.4	.4	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.4	.3	.3	.3	.3	.3	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.3	.4	.4	.4	.4	.4	.4	.4	.3	.3	.3	.3	.3	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3
.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2

Figure 40. ATOVS mean daily count. JULY 2006
NOAA16, using all observations
Global average number of observations in 24 hours = 595635



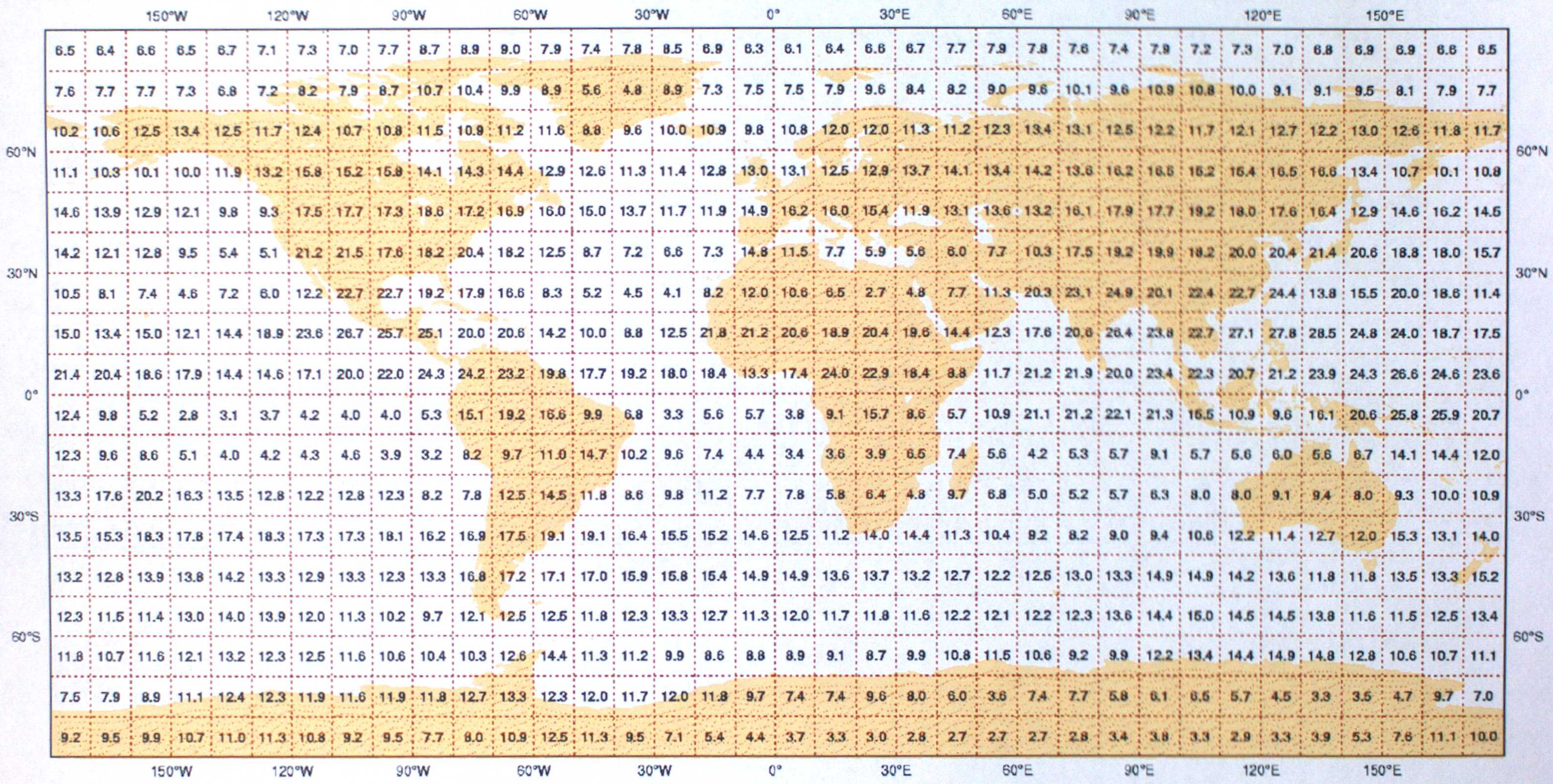
387	389	401	415	414	405	413	412	414	412	421	427	432	425	415	419	434	428	420	414	414	403	404	393	386	377	384	379	374	370	371	371	375	367	379	387
1140	1194	1225	1237	1218	1218	1224	1230	1245	1253	1274	1290	1277	1204	1194	1334	1338	1334	1304	1271	1207	1168	1132	1126	1152	1170	1202	1218	1196	1173	1145	1127	1100	1063	1075	1103
852	958	1040	1081	1107	1127	1106	1057	1042	1044	1040	1045	1072	1095	1136	1155	1165	1172	1138	1030	922	898	937	1015	1101	1155	1177	1171	1137	1117	1090	1074	1061	996	892	819
656	759	907	1005	1060	1098	1106	1055	974	927	944	979	1005	1035	1065	1083	1074	1068	1051	907	758	809	960	1060	1092	1086	1093	1095	1046	1007	1027	1079	1096	1064	948	755
591	641	864	981	1038	1085	1076	1048	968	879	879	945	994	1051	1080	1067	1077	1052	1001	801	699	892	1017	1037	1087	1081	1061	1041	990	990	1032	1054	1076	1071	1015	811
878	845	880	1012	1046	1032	1091	1045	979	863	816	941	969	1043	1077	1021	1077	1047	936	733	688	949	1003	1023	1115	1052	1033	1009	932	1006	1027	1043	1085	1027	1064	989
945	984	924	1075	1082	1026	1122	1041	1030	871	775	830	969	1020	1077	1004	1093	1011	850	697	721	965	969	1021	1122	1029	1032	961	873	1046	1032	1048	1098	998	1067	1003
909	987	914	1056	1053	1029	1128	1027	1035	903	796	893	956	1036	1091	994	1075	1032	799	679	827	995	1004	1014	1085	1036	1049	911	856	1060	1027	1020	1077	1003	1081	981
925	959	940	1062	1069	1032	1077	1042	1066	1018	919	934	1019	1024	1060	1036	1062	1023	755	674	928	1012	1039	1064	1075	1053	1045	893	891	1040	1032	1053	1052	1009	1046	996
914	914	970	983	1037	1038	1018	1021	1000	1021	997	951	1037	1040	1027	1058	1006	993	700	659	964	997	1026	1067	1025	1076	1041	874	913	1018	1041	1054	1030	1064	1035	999
920	878	1030	993	1050	1096	1032	1052	988	961	990	929	1018	1042	985	1044	952	937	633	676	1031	998	1041	1070	982	1056	985	823	933	978	1049	1011	988	1093	998	982
897	850	1039	1008	1055	1086	989	1097	1046	923	937	966	1048	1047	983	1099	999	869	604	709	1021	975	1017	1086	986	1031	886	813	945	920	1006	1036	962	1063	892	923
932	878	1038	988	993	1051	964	1052	1013	972	995	998	1026	1026	1005	1045	993	869	726	808	1010	1026	1051	1077	1007	1037	957	920	962	951	1049	1061	1005	1039	1002	994
960	926	958	990	1031	1061	1050	1050	1016	970	970	1041	1050	1043	1021	1025	975	835	790	897	976	1023	1050	1049	1041	1041	1021	1005	996	997	1049	1058	1048	1053	1036	1002
1014	982	985	995	1016	1009	995	1007	1000	946	981	1068	1078	1057	1051	1031	927	853	870	939	1005	1048	1078	1099	1082	1039	1024	1036	1042	1025	1050	1083	1085	1072	1051	1032
1070	1099	1096	1062	1077	1103	1119	1116	1103	1123	1143	1064	1123	1102	1058	996	970	973	1020	1056	1045	1049	1044	988	1009	1044	1073	1022	1046	1014	1043	1018	979	930	965	1010
1074	1069	1054	1001	962	869	883	963	892	884	794	788	1022	1063	1065	1010	814	578	515	471	458	545	357	328	785	910	700	239	300	414	507	963	1096	990	762	941
221	235	230	241	284	310	286	206	164	251	293	258	213	248	285	280	233	149	101	97	141	137	58	35	30	32	39	55	113	207	263	317	291	266	244	230

Figure 41. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS8 (Surface)
NOAA16, using all observations



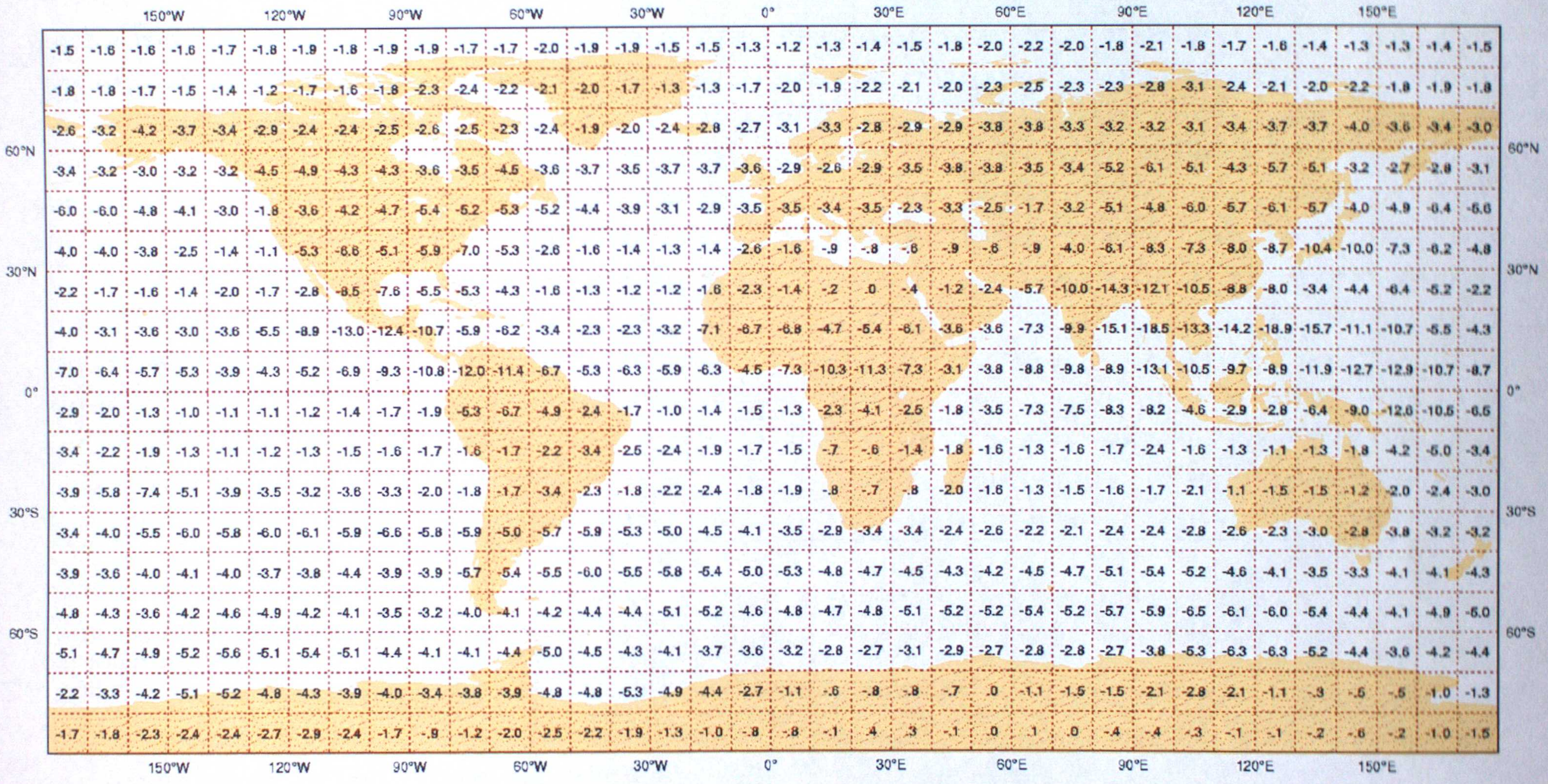
-6.3	-6.4	-6.5	-6.7	-7.0	-7.3	-7.8	-7.5	-7.5	-8.0	-6.5	-6.8	-7.9	-7.6	-7.6	-6.2	-6.5	-5.9	-5.5	-5.8	-6.0	-6.3	-7.3	-8.2	-8.5	-7.7	-7.2	-8.0	-7.0	-6.9	-6.8	-6.2	-5.8	-5.7	-5.7	-6.1
-6.6	-6.3	-6.1	-5.4	-5.0	-4.8	-7.1	-6.8	-7.5	-9.0	-8.3	-6.7	-6.9	-6.9	-6.0	-4.0	-4.7	-6.9	-9.4	-8.6	-8.8	-8.5	-7.4	-7.2	-6.7	-5.9	-7.2	-9.6	-10.6	-7.9	-6.3	-6.2	-7.7	-6.5	-6.7	-6.4
-8.9	-11.6	-15.1	-12.1	-11.1	-9.9	-7.8	-9.3	-9.7	-8.9	-8.5	-7.0	-7.7	-5.6	-7.6	-9.2	-10.2	-9.9	-11.1	-11.8	-10.3	-11.4	-11.1	-12.8	-12.9	-11.1	-10.9	-10.4	-10.7	-12.0	-12.7	-12.1	-12.7	-11.6	-11.6	-10.7
-10.5	-10.2	-10.6	-11.9	-10.3	-13.5	-14.2	-12.3	-12.6	-9.3	-10.4	-13.8	-10.7	-11.4	-11.9	-13.0	-12.3	-11.0	-8.3	-8.0	-9.4	-11.8	-12.8	-12.6	-11.9	-11.6	-15.7	-16.9	-14.6	-12.8	-16.3	-13.4	-7.9	-8.0	-8.9	-9.8
-15.4	-16.0	-13.3	-12.3	-9.8	-5.2	-8.1	-9.8	-11.7	-13.3	-14.1	-13.3	-13.0	-11.2	-11.1	-9.5	-8.5	-9.7	-9.2	-9.3	-10.0	-6.6	-9.0	-6.3	-3.8	-7.9	-12.6	-11.7	-15.2	-14.4	-16.0	-14.7	-10.5	-12.5	-15.9	-14.6
-9.9	-10.6	-10.5	-7.4	-4.6	-2.6	-11.6	-14.5	-12.0	-14.5	-16.5	-12.6	-5.9	-3.6	-3.6	-4.0	-4.0	-6.2	-3.3	-1.4	-1.3	-.1	-.7	.4	-.3	-8.0	-12.2	-15.8	-16.4	-18.0	-19.6	-23.3	-22.8	-17.6	-15.1	-11.9
-4.9	-3.9	-3.8	-4.1	-6.1	-5.1	-6.3	-19.3	-17.1	-12.8	-12.7	-10.1	-3.6	-3.0	-3.3	-3.6	-4.5	-6.6	-3.5	.2	.8	.8	-1.9	-5.5	-13.2	-22.3	-29.8	-26.0	-22.7	-19.1	-16.8	-7.5	-9.9	-15.3	-11.9	-5.1
-9.2	-7.0	-8.4	-7.3	-8.6	-12.5	-19.8	-28.9	-28.2	-24.5	-13.6	-14.3	-7.7	-5.4	-5.9	-8.5	-16.9	-16.7	-17.1	-13.5	-13.5	-13.6	-8.1	-8.8	-17.7	-23.0	-33.0	-41.0	-30.8	-31.3	-41.1	-34.4	-25.3	-24.5	-12.6	-9.5
-15.5	-14.0	-12.6	-11.7	-8.7	-9.8	-11.6	-15.7	-20.9	-23.9	-26.8	-25.8	-15.3	-12.1	-14.6	-13.8	-14.7	-11.1	-18.0	-25.5	-27.3	-17.0	-8.1	-9.5	-20.8	-23.0	-20.5	-30.0	-24.0	-22.4	-20.1	-26.5	-28.7	-28.3	-23.5	-19.1
-6.1	-4.0	-2.3	-1.6	-1.7	-2.0	-2.2	-3.1	-4.7	-5.2	-12.6	-15.7	-11.7	-5.8	-4.0	-1.9	-2.9	-3.6	-3.5	-6.2	-10.4	-6.4	-4.7	-8.8	-17.1	-17.2	-18.7	-18.8	-10.5	-6.3	-6.3	-15.1	-20.6	-27.6	-23.0	-14.4
-8.2	-5.2	-4.2	-2.6	-2.6	-3.1	-3.8	-4.2	-5.4	-6.4	-4.6	-3.3	-4.8	-7.2	-6.7	-6.4	-5.4	-6.4	-6.2	-1.7	-1.1	-3.8	-4.9	-4.4	-3.4	-4.3	-4.6	-6.3	-4.4	-3.5	-1.5	-2.4	-4.5	-10.4	-12.8	-8.8
-11.3	-16.0	-18.2	-13.3	-10.8	-9.6	-9.2	-10.6	-9.9	-6.5	-5.8	-3.5	-7.8	-5.5	-5.4	-6.5	-7.1	-5.8	-6.6	-1.5	-.9	-1.3	-5.4	-5.5	-5.2	-5.6	-5.9	-6.2	-7.6	-2.5	-3.6	-3.4	-3.1	-6.3	-7.9	-9.5
-11.2	-12.6	-15.5	-17.0	-16.6	-16.9	-17.7	-17.4	-19.6	-17.3	-15.9	-12.3	-14.2	-15.8	-15.5	-15.0	-13.9	-12.7	-11.8	-9.7	-9.4	-9.4	-7.4	-8.9	-8.4	-8.3	-9.5	-9.5	-10.1	-8.7	-7.9	-9.9	-8.4	-12.4	-11.0	-10.3
-13.2	-12.7	-13.5	-13.4	-12.5	-11.6	-12.6	-14.4	-13.6	-13.5	-16.8	-14.8	-15.7	-17.9	-17.2	-18.0	-16.9	-16.2	-17.1	-15.3	-15.0	-13.6	-12.7	-13.6	-14.8	-15.5	-17.1	-17.6	-16.5	-14.8	-13.4	-11.9	-11.5	-13.8	-13.6	-13.1
-16.6	-14.9	-12.7	-13.7	-14.3	-15.5	-13.6	-13.7	-12.4	-12.1	-13.8	-13.9	-14.4	-15.3	-14.9	-16.9	-17.4	-16.5	-16.7	-16.2	-17.7	-17.6	-17.8	-18.2	-18.6	-18.2	-19.1	-19.4	-20.1	-18.7	-18.3	-16.6	-14.1	-14.1	-16.7	-17.0
-17.9	-16.2	-16.5	-17.0	-17.6	-16.7	-17.4	-16.8	-15.2	-14.7	-14.5	-13.8	-16.5	-16.2	-15.3	-15.1	-14.7	-14.3	-12.9	-11.7	-11.5	-12.2	-10.9	-10.1	-10.9	-11.4	-10.8	-13.0	-16.1	-18.7	-18.8	-15.8	-14.4	-13.3	-15.3	-16.7
-10.4	-14.1	-16.0	-17.3	-15.7	-14.5	-13.9	-13.8	-12.2	-10.4	-12.0	-11.2	-16.4	-16.6	-17.5	-15.0	-11.8	-6.4	-3.9	-1.9	-2.8	-2.8	-3.1	-1.8	-3.3	-4.8	-5.2	-5.9	-8.4	-7.6	-5.8	-3.2	-4.0	-3.9	-3.9	-6.8
-10.8	-10.7	-10.5	-7.8	-6.7	-7.2	-8.1	-7.2	-5.2	-2.6	-5.5	-8.8	-8.7	-7.6	-6.4	-4.7	-5.2	-6.0	-6.0	-4.9	-3.2	-4.1	-6.4	-5.6	-5.0	-5.5	-6.7	-6.9	-6.7	-5.7	-5.3	-5.0	-5.4	-2.2	-6.7	-10.8

Figure 42. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS8 (Surface)
NOAA16, using all observations



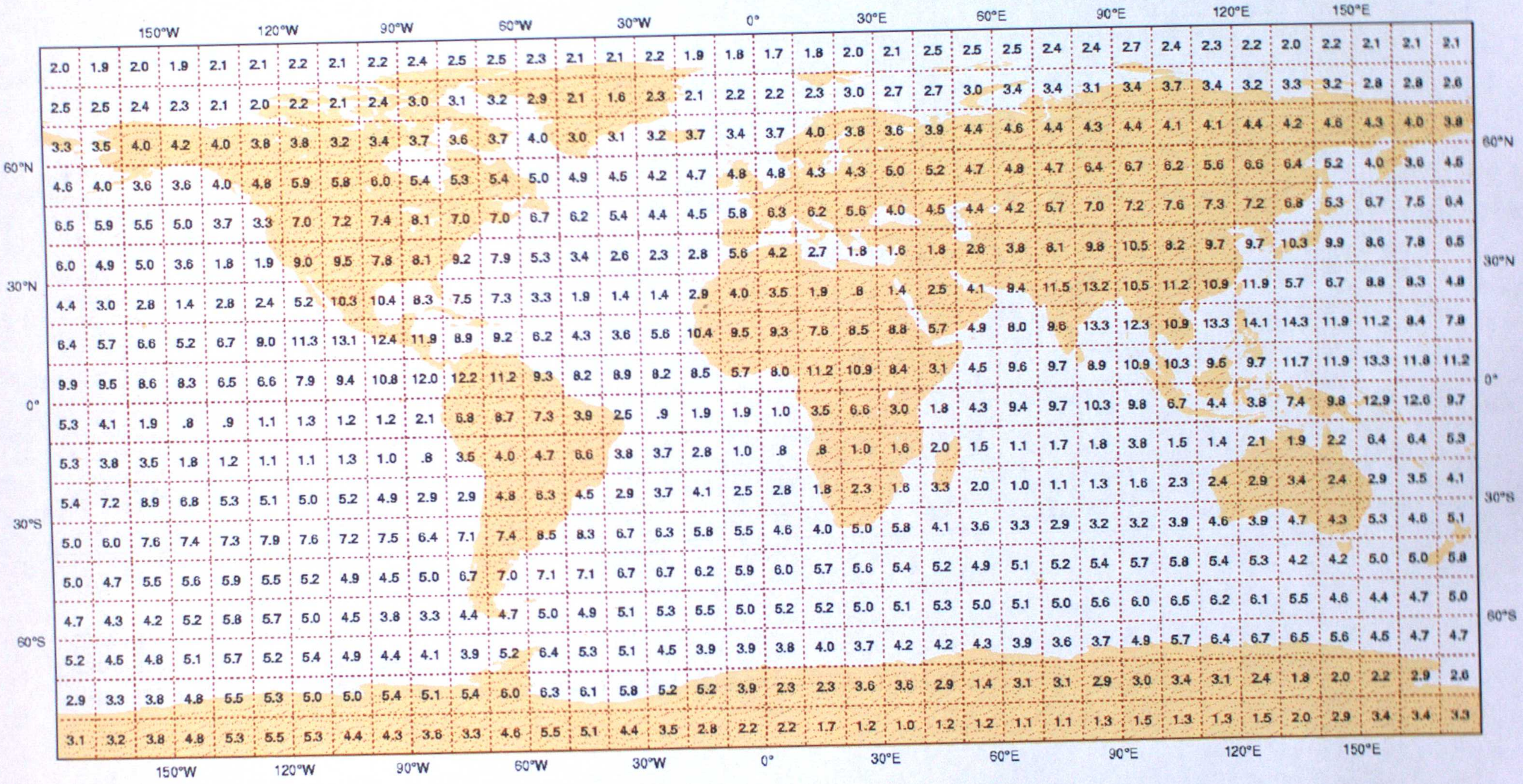
6.5	6.4	6.6	6.5	6.7	7.1	7.3	7.0	7.7	8.7	8.9	9.0	7.9	7.4	7.8	8.5	6.9	6.3	6.1	6.4	6.6	6.7	7.7	7.9	7.8	7.6	7.4	7.9	7.2	7.3	7.0	6.8	6.9	6.9	6.6	6.5
7.6	7.7	7.7	7.3	6.8	7.2	8.2	7.9	8.7	10.7	10.4	9.9	8.9	5.6	4.8	8.9	7.3	7.5	7.5	7.9	9.6	8.4	8.2	9.0	9.6	10.1	9.6	10.9	10.8	10.0	9.1	9.1	9.5	8.1	7.9	7.7
10.2	10.6	12.5	13.4	12.5	11.7	12.4	10.7	10.8	11.5	10.9	11.2	11.6	8.8	9.6	10.0	10.9	9.8	10.8	12.0	12.0	11.3	11.2	12.3	13.4	13.1	12.5	12.2	11.7	12.1	12.7	12.2	13.0	12.6	11.8	11.7
11.1	10.3	10.1	10.0	11.9	13.2	15.8	15.2	15.8	14.1	14.3	14.4	12.9	12.6	11.3	11.4	12.8	13.0	13.1	12.5	12.9	13.7	14.1	13.4	14.2	13.6	16.2	16.5	16.2	16.4	16.5	16.6	13.4	10.7	10.1	10.8
14.6	13.9	12.9	12.1	9.8	9.3	17.5	17.7	17.3	18.6	17.2	16.9	16.0	15.0	13.7	11.7	11.9	14.9	16.2	16.0	15.4	11.9	13.1	13.6	13.2	16.1	17.9	17.7	19.2	18.0	17.6	16.4	12.9	14.6	16.2	14.5
14.2	12.1	12.8	9.5	5.4	5.1	21.2	21.5	17.6	18.2	20.4	18.2	12.5	8.7	7.2	6.6	7.3	14.8	11.5	7.7	5.9	5.6	6.0	7.7	10.3	17.5	19.2	19.9	18.2	20.0	20.4	21.4	20.6	18.8	18.0	15.7
10.5	8.1	7.4	4.6	7.2	6.0	12.2	22.7	22.7	19.2	17.9	16.6	8.3	5.2	4.5	4.1	8.2	12.0	10.6	6.5	2.7	4.8	7.7	11.3	20.3	23.1	24.9	20.1	22.4	22.7	24.4	13.8	15.5	20.0	18.6	11.4
15.0	13.4	15.0	12.1	14.4	18.9	23.6	26.7	25.7	25.1	20.0	20.6	14.2	10.0	8.8	12.5	21.8	21.2	20.6	18.9	20.4	19.6	14.4	12.3	17.6	20.6	26.4	23.8	22.7	27.1	27.8	28.5	24.8	24.0	18.7	17.5
21.4	20.4	18.6	17.9	14.4	14.6	17.1	20.0	22.0	24.3	24.2	23.2	19.8	17.7	19.2	18.0	18.4	13.3	17.4	24.0	22.9	18.4	8.8	11.7	21.2	21.9	20.0	23.4	22.3	20.7	21.2	23.9	24.3	26.6	24.6	23.6
12.4	9.8	5.2	2.8	3.1	3.7	4.2	4.0	4.0	5.3	15.1	19.2	16.6	9.9	6.8	3.3	5.6	5.7	3.8	9.1	15.7	8.6	5.7	10.9	21.1	21.2	22.1	21.3	16.5	10.9	9.6	16.1	20.6	25.8	25.9	20.7
12.3	9.6	8.6	5.1	4.0	4.2	4.3	4.6	3.9	3.2	8.2	9.7	11.0	14.7	10.2	9.6	7.4	4.4	3.4	3.6	3.9	6.5	7.4	5.6	4.2	5.3	5.7	9.1	5.7	5.6	6.0	5.6	6.7	14.1	14.4	12.0
13.3	17.6	20.2	16.3	13.5	12.8	12.2	12.8	12.3	8.2	7.8	12.5	14.5	11.8	8.6	9.8	11.2	7.7	7.8	5.8	6.4	4.8	9.7	6.8	5.0	5.2	5.7	6.3	8.0	8.0	9.1	9.4	8.0	9.3	10.0	10.9
13.5	15.3	18.3	17.8	17.4	18.3	17.3	17.3	18.1	16.2	16.9	17.5	19.1	19.1	16.4	15.5	15.2	14.6	12.5	11.2	14.0	14.4	11.3	10.4	9.2	8.2	9.0	9.4	10.6	12.2	11.4	12.7	12.0	15.3	13.1	14.0
13.2	12.8	13.9	13.8	14.2	13.3	12.9	13.3	12.3	13.3	16.8	17.2	17.1	17.0	15.9	15.8	15.4	14.9	14.9	13.6	13.7	13.2	12.7	12.2	12.5	13.0	13.3	14.9	14.9	14.2	13.6	11.8	11.8	13.5	13.3	15.2
12.3	11.5	11.4	13.0	14.0	13.9	12.0	11.3	10.2	9.7	12.1	12.5	12.5	11.8	12.3	13.3	12.7	11.3	12.0	11.7	11.8	11.6	12.2	12.1	12.2	12.3	13.6	14.4	16.0	14.5	14.5	13.8	11.6	11.5	12.5	13.4
11.8	10.7	11.6	12.1	13.2	12.3	12.5	11.6	10.6	10.4	10.3	12.6	14.4	11.3	11.2	9.9	8.6	8.8	8.9	9.1	8.7	9.9	10.8	11.5	10.6	9.2	9.9	12.2	13.4	14.4	14.9	14.8	12.8	10.6	10.7	11.1
7.5	7.9	8.9	11.1	12.4	12.3	11.9	11.6	11.9	11.8	12.7	13.3	12.3	12.0	11.7	12.0	11.8	9.7	7.4	7.4	9.6	8.0	6.0	3.6	7.4	7.7	5.8	6.1	6.5	5.7	4.5	3.3	3.5	4.7	9.7	7.0
9.2	9.5	9.9	10.7	11.0	11.3	10.8	9.2	9.5	7.7	8.0	10.9	12.5	11.3	9.5	7.1	5.4	4.4	3.7	3.3	3.0	2.8	2.7	2.7	2.7	2.8	3.4	3.8	3.3	2.9	3.3	3.9	5.3	7.6	11.1	10.0

Figure 43. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS15 (700 hPa)
NOAA16, using all observations



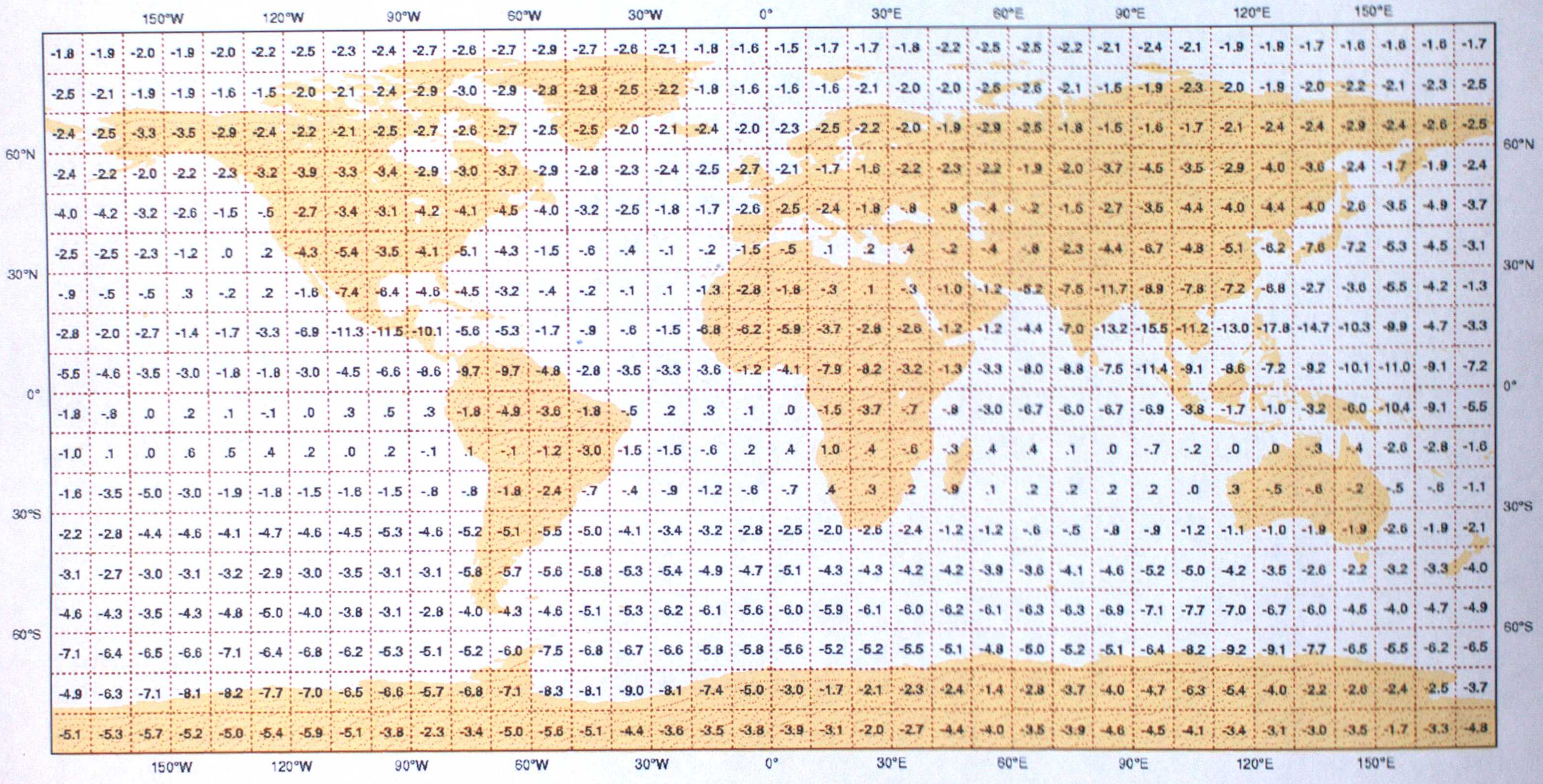
-1.5	-1.6	-1.6	-1.6	-1.7	-1.8	-1.9	-1.8	-1.9	-1.9	-1.7	-1.7	-2.0	-1.9	-1.9	-1.5	-1.5	-1.3	-1.2	-1.3	-1.4	-1.5	-1.8	-2.0	-2.2	-2.0	-1.8	-2.1	-1.8	-1.7	-1.6	-1.4	-1.3	-1.3	-1.4	-1.5
-1.8	-1.8	-1.7	-1.5	-1.4	-1.2	-1.7	-1.6	-1.8	-2.3	-2.4	-2.2	-2.1	-2.0	-1.7	-1.3	-1.3	-1.7	-2.0	-1.9	-2.2	-2.1	-2.0	-2.3	-2.5	-2.3	-2.3	-2.8	-3.1	-2.4	-2.1	-2.0	-2.2	-1.8	-1.9	-1.8
-2.6	-3.2	-4.2	-3.7	-3.4	-2.9	-2.4	-2.4	-2.5	-2.6	-2.5	-2.3	-2.4	-1.9	-2.0	-2.4	-2.8	-2.7	-3.1	-3.3	-2.8	-2.9	-2.9	-3.8	-3.8	-3.3	-3.2	-3.2	-3.1	-3.4	-3.7	-3.7	-4.0	-3.6	-3.4	-3.0
-3.4	-3.2	-3.0	-3.2	-3.2	-4.5	-4.9	-4.3	-4.3	-3.6	-3.5	-4.5	-3.6	-3.7	-3.5	-3.7	-3.7	-3.6	-2.9	-2.6	-2.9	-3.5	-3.8	-3.8	-3.5	-3.4	-5.2	-6.1	-5.1	-4.3	-5.7	-5.1	-3.2	-2.7	-2.8	-3.1
-6.0	-6.0	-4.8	-4.1	-3.0	-1.8	-3.6	-4.2	-4.7	-5.4	-5.2	-5.3	-5.2	-4.4	-3.9	-3.1	-2.9	-3.5	-3.5	-3.4	-3.5	-2.3	-3.3	-2.5	-1.7	-3.2	-5.1	-4.8	-6.0	-5.7	-6.1	-5.7	-4.0	-4.9	-6.4	-6.6
-4.0	-4.0	-3.8	-2.5	-1.4	-1.1	-5.3	-6.6	-5.1	-5.9	-7.0	-5.3	-2.6	-1.6	-1.4	-1.3	-1.4	-2.6	-1.6	-.9	-.8	-.6	-.9	-.6	-.9	-4.0	-6.1	-8.3	-7.3	-8.0	-8.7	-10.4	-10.0	-7.3	-6.2	-4.8
-2.2	-1.7	-1.6	-1.4	-2.0	-1.7	-2.8	-8.5	-7.6	-5.5	-5.3	-4.3	-1.6	-1.3	-1.2	-1.2	-1.6	-2.3	-1.4	-.2	.0	-.4	-1.2	-2.4	-5.7	-10.0	-14.3	-12.1	-10.5	-8.8	-8.0	-3.4	-4.4	-6.4	-5.2	-2.2
-4.0	-3.1	-3.6	-3.0	-3.6	-5.5	-8.9	-13.0	-12.4	-10.7	-5.9	-6.2	-3.4	-2.3	-2.3	-3.2	-7.1	-6.7	-6.8	-4.7	-5.4	-6.1	-3.6	-3.6	-7.3	-9.9	-15.1	-18.5	-13.3	-14.2	-18.9	-15.7	-11.1	-10.7	-5.5	-4.3
-7.0	-6.4	-5.7	-5.3	-3.9	-4.3	-5.2	-6.9	-9.3	-10.8	-12.0	-11.4	-6.7	-5.3	-6.3	-5.9	-6.3	-4.5	-7.3	-10.3	-11.3	-7.3	-3.1	-3.8	-8.8	-9.8	-8.9	-13.1	-10.5	-9.7	-8.9	-11.9	-12.7	-12.9	-10.7	-8.7
-2.9	-2.0	-1.3	-1.0	-1.1	-1.1	-1.2	-1.4	-1.7	-1.9	-5.3	-6.7	-4.9	-2.4	-1.7	-1.0	-1.4	-1.5	-1.3	-2.3	-4.1	-2.5	-1.8	-3.5	-7.3	-7.5	-8.3	-8.2	-4.6	-2.9	-2.8	-6.4	-9.0	-12.0	-10.5	-6.5
-3.4	-2.2	-1.9	-1.3	-1.1	-1.2	-1.3	-1.5	-1.6	-1.7	-1.6	-1.7	-2.2	-3.4	-2.5	-2.4	-1.9	-1.7	-1.5	-.7	-.6	-1.4	-1.8	-1.6	-1.3	-1.6	-1.7	-2.4	-1.6	-1.3	-1.1	-1.3	-1.8	-4.2	-6.0	-3.4
-3.9	-5.8	-7.4	-5.1	-3.9	-3.5	-3.2	-3.6	-3.3	-2.0	-1.8	-1.7	-3.4	-2.3	-1.8	-2.2	-2.4	-1.8	-1.9	-.8	-.7	-.8	-2.0	-1.6	-1.3	-1.5	-1.6	-1.7	-2.1	-1.1	-1.5	-1.5	-1.2	-2.0	-2.4	-3.0
-3.4	-4.0	-5.5	-6.0	-5.8	-6.0	-6.1	-5.9	-6.6	-5.8	-5.9	-5.0	-5.7	-5.9	-5.3	-5.0	-4.5	-4.1	-3.5	-2.9	-3.4	-3.4	-2.4	-2.6	-2.2	-2.1	-2.4	-2.4	-2.8	-2.6	-2.3	-3.0	-2.8	-3.8	-3.2	-3.2
-3.9	-3.6	-4.0	-4.1	-4.0	-3.7	-3.8	-4.4	-3.9	-3.9	-5.7	-5.4	-5.5	-6.0	-5.5	-5.8	-6.4	-5.0	-5.3	-4.8	-4.7	-4.5	-4.3	-4.2	-4.5	-4.7	-5.1	-5.4	-5.2	-4.6	-4.1	-3.5	-3.3	-4.1	-4.1	-4.3
-4.8	-4.3	-3.6	-4.2	-4.6	-4.9	-4.2	-4.1	-3.5	-3.2	-4.0	-4.1	-4.2	-4.4	-4.4	-5.1	-5.2	-4.6	-4.8	-4.7	-4.8	-5.1	-5.2	-5.2	-5.4	-5.2	-5.7	-5.9	-6.5	-6.1	-6.0	-5.4	-4.4	-4.1	-4.9	-6.0
-5.1	-4.7	-4.9	-5.2	-5.6	-6.1	-5.4	-5.1	-4.4	-4.1	-4.1	-4.4	-5.0	-4.5	-4.3	-4.1	-3.7	-3.6	-3.2	-2.8	-2.7	-3.1	-2.9	-2.7	-2.8	-2.8	-2.7	-3.8	-5.3	-6.3	-6.3	-5.2	-4.4	-3.6	-4.2	-4.4
-2.2	-3.3	-4.2	-5.1	-5.2	-4.8	-4.3	-3.9	-4.0	-3.4	-3.8	-3.9	-4.8	-4.8	-5.3	-4.9	-4.4	-2.7	-1.1	-.6	-.8	-.8	-.7	.0	-1.1	-1.5	-1.5	-2.1	-2.8	-2.1	-1.1	-.3	-.5	-.5	-1.0	-1.3
-1.7	-1.8	-2.3	-2.4	-2.4	-2.7	-2.9	-2.4	-1.7	-.9	-1.2	-2.0	-2.5	-2.2	-1.9	-1.3	-1.0	-.8	-.8	-.1	.4	.3	-.1	.0	.1	.0	-.4	-.4	-.3	-.1	-.1	-.2	-.6	-.2	-1.0	-1.5

Figure 44. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS15 (700 hPa)
NOAA16, using all observations



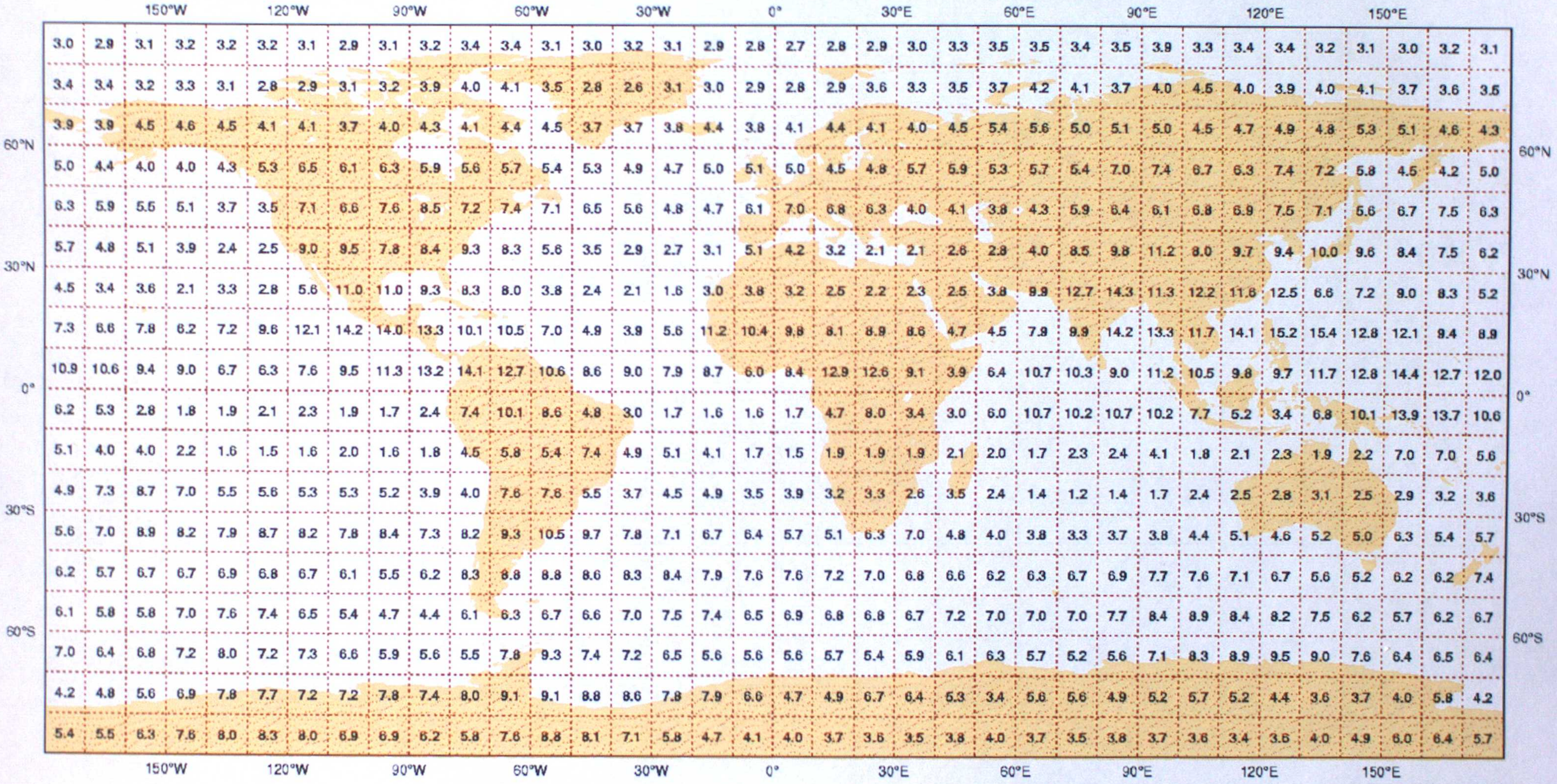
2.0	1.9	2.0	1.9	2.1	2.1	2.2	2.1	2.2	2.4	2.5	2.5	2.3	2.1	2.1	2.2	1.9	1.8	1.7	1.8	2.0	2.1	2.5	2.5	2.5	2.4	2.4	2.7	2.4	2.3	2.2	2.0	2.2	2.1	2.1	2.1
2.5	2.5	2.4	2.3	2.1	2.0	2.2	2.1	2.4	3.0	3.1	3.2	2.9	2.1	1.6	2.3	2.1	2.2	2.2	2.3	3.0	2.7	2.7	3.0	3.4	3.4	3.1	3.4	3.7	3.4	3.2	3.3	3.2	2.8	2.8	2.6
3.3	3.5	4.0	4.2	4.0	3.8	3.8	3.2	3.4	3.7	3.6	3.7	4.0	3.0	3.1	3.2	3.7	3.4	3.7	4.0	3.8	3.6	3.9	4.4	4.6	4.4	4.3	4.4	4.1	4.1	4.4	4.2	4.6	4.3	4.0	3.8
4.6	4.0	3.6	3.6	4.0	4.8	5.9	5.8	6.0	5.4	5.3	5.4	5.0	4.9	4.5	4.2	4.7	4.8	4.8	4.3	4.3	5.0	5.2	4.7	4.8	4.7	6.4	6.7	6.2	5.6	6.6	6.4	5.2	4.0	3.6	4.6
6.5	5.9	5.5	5.0	3.7	3.3	7.0	7.2	7.4	8.1	7.0	7.0	6.7	6.2	5.4	4.4	4.5	5.8	6.3	6.2	5.6	4.0	4.5	4.4	4.2	5.7	7.0	7.2	7.6	7.3	7.2	6.8	5.3	6.7	7.5	6.4
6.0	4.9	5.0	3.6	1.8	1.9	9.0	9.5	7.8	8.1	9.2	7.9	5.3	3.4	2.6	2.3	2.8	5.6	4.2	2.7	1.8	1.6	1.8	2.6	3.8	8.1	9.8	10.5	8.2	9.7	9.7	10.3	9.9	8.6	7.8	6.5
4.4	3.0	2.8	1.4	2.8	2.4	5.2	10.3	10.4	8.3	7.5	7.3	3.3	1.9	1.4	1.4	2.9	4.0	3.5	1.9	.8	1.4	2.5	4.1	9.4	11.5	13.2	10.5	11.2	10.9	11.9	5.7	6.7	8.8	8.3	4.8
6.4	5.7	6.6	5.2	6.7	9.0	11.3	13.1	12.4	11.9	8.9	9.2	6.2	4.3	3.6	5.6	10.4	9.5	9.3	7.6	8.5	8.8	5.7	4.9	8.0	9.6	13.3	12.3	10.9	13.3	14.1	14.3	11.9	11.2	8.4	7.8
9.9	9.5	8.6	8.3	6.5	6.6	7.9	9.4	10.8	12.0	12.2	11.2	9.3	8.2	8.9	8.2	8.5	5.7	8.0	11.2	10.9	8.4	3.1	4.5	9.6	9.7	8.9	10.9	10.3	9.5	9.7	11.7	11.9	13.3	11.8	11.2
5.3	4.1	1.9	.8	.9	1.1	1.3	1.2	1.2	2.1	6.8	8.7	7.3	3.9	2.5	.9	1.9	1.9	1.0	3.5	6.6	3.0	1.8	4.3	9.4	9.7	10.3	9.8	6.7	4.4	3.8	7.4	9.8	12.9	12.6	9.7
5.3	3.8	3.5	1.8	1.2	1.1	1.1	1.3	1.0	.8	3.5	4.0	4.7	6.6	3.8	3.7	2.8	1.0	.8	.8	1.0	1.6	2.0	1.5	1.1	1.7	1.8	3.8	1.5	1.4	2.1	1.9	2.2	6.4	6.4	5.3
5.4	7.2	8.9	6.8	5.3	5.1	5.0	5.2	4.9	2.9	2.9	4.8	8.3	4.5	2.9	3.7	4.1	2.5	2.8	1.8	2.3	1.6	3.3	2.0	1.0	1.1	1.3	1.6	2.3	2.4	2.9	3.4	2.4	2.9	3.5	4.1
5.0	6.0	7.6	7.4	7.3	7.9	7.6	7.2	7.5	6.4	7.1	7.4	8.5	8.3	6.7	6.3	5.8	5.5	4.6	4.0	5.0	5.8	4.1	3.6	3.3	2.9	3.2	3.2	3.9	4.6	3.9	4.7	4.3	5.3	4.6	5.1
5.0	4.7	5.5	5.6	5.9	5.5	5.2	4.9	4.5	5.0	6.7	7.0	7.1	7.1	6.7	6.7	6.2	5.9	6.0	5.7	5.6	5.4	5.2	4.9	5.1	5.2	5.4	5.7	5.8	5.4	5.3	4.2	4.2	5.0	5.0	5.8
4.7	4.3	4.2	5.2	5.8	5.7	5.0	4.5	3.8	3.3	4.4	4.7	5.0	4.9	5.1	5.3	5.5	5.0	5.2	5.2	5.0	5.1	5.3	5.0	5.1	5.0	5.6	6.0	6.5	6.2	6.1	5.5	4.6	4.4	4.7	5.0
5.2	4.5	4.8	5.1	5.7	5.2	5.4	4.9	4.4	4.1	3.9	5.2	6.4	5.3	5.1	4.5	3.9	3.9	3.8	4.0	3.7	4.2	4.2	4.3	3.9	3.6	3.7	4.9	5.7	6.4	6.7	6.5	5.6	4.5	4.7	4.7
2.9	3.3	3.8	4.8	5.5	5.3	5.0	5.0	5.4	5.1	5.4	6.0	6.3	6.1	5.8	5.2	5.2	3.9	2.3	2.3	3.6	3.6	2.9	1.4	3.1	3.1	2.9	3.0	3.4	3.1	2.4	1.8	2.0	2.2	2.9	2.6
3.1	3.2	3.8	4.8	5.3	5.5	5.3	4.4	4.3	3.6	3.3	4.6	5.5	5.1	4.4	3.5	2.8	2.2	2.2	1.7	1.2	1.0	1.2	1.2	1.1	1.1	1.3	1.5	1.3	1.3	1.5	2.0	2.9	3.4	3.4	3.3

Figure 45. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS11 (500 - 700 hPa)
NOAA16, using all observations



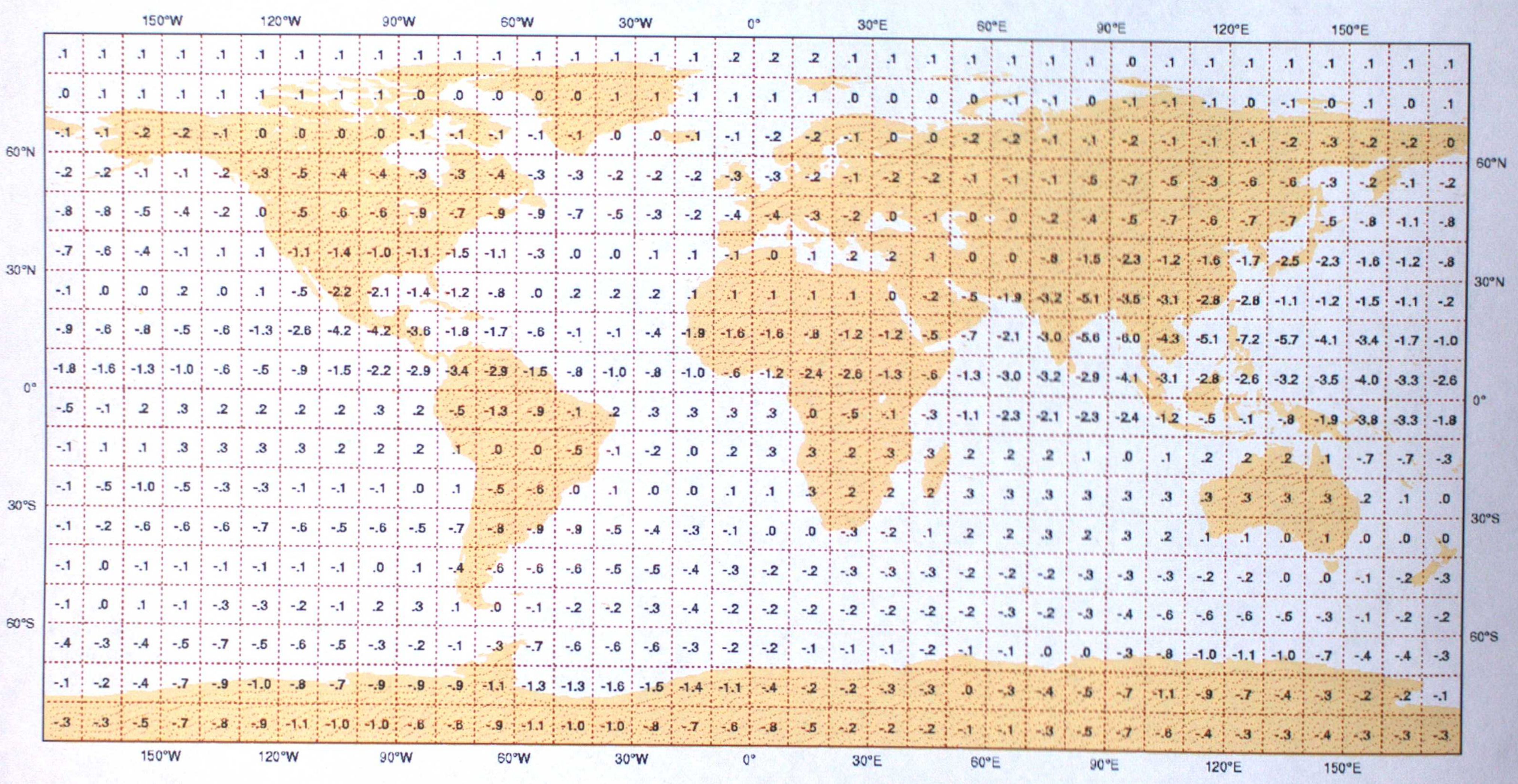
-1.8	-1.9	-2.0	-1.9	-2.0	-2.2	-2.5	-2.3	-2.4	-2.7	-2.6	-2.7	-2.9	-2.7	-2.6	-2.1	-1.8	-1.6	-1.5	-1.7	-1.7	-1.8	-2.2	-2.5	-2.5	-2.2	-2.1	-2.4	-2.1	-1.9	-1.8	-1.7	-1.6	-1.6	-1.6	-1.7
-2.5	-2.1	-1.9	-1.9	-1.6	-1.5	-2.0	-2.1	-2.4	-2.9	-3.0	-2.9	-2.8	-2.8	-2.5	-2.2	-1.8	-1.6	-1.6	-1.6	-2.1	-2.0	-2.0	-2.5	-2.6	-2.1	-1.5	-1.9	-2.3	-2.0	-1.9	-2.0	-2.2	-2.1	-2.3	-2.5
-2.4	-2.5	-3.3	-3.5	-2.9	-2.4	-2.2	-2.1	-2.5	-2.7	-2.6	-2.7	-2.5	-2.5	-2.0	-2.1	-2.4	-2.0	-2.3	-2.5	-2.2	-2.0	-1.9	-2.9	-2.5	-1.8	-1.5	-1.6	-1.7	-2.1	-2.4	-2.4	-2.9	-2.4	-2.6	-2.5
-2.4	-2.2	-2.0	-2.2	-2.3	-3.2	-3.9	-3.3	-3.4	-2.9	-3.0	-3.7	-2.9	-2.8	-2.3	-2.4	-2.5	-2.7	-2.1	-1.7	-1.6	-2.2	-2.3	-2.2	-1.9	-2.0	-3.7	-4.5	-3.5	-2.9	-4.0	-3.6	-2.4	-1.7	-1.9	-2.4
-4.0	-4.2	-3.2	-2.6	-1.5	-.5	-2.7	-3.4	-3.1	-4.2	-4.1	-4.5	-4.0	-3.2	-2.5	-1.8	-1.7	-2.6	-2.5	-2.4	-1.8	-.8	-.9	-.4	-.2	-1.6	-2.7	-3.5	-4.4	-4.0	-4.4	-4.0	-2.6	-3.5	-4.9	-3.7
-2.5	-2.5	-2.3	-1.2	.0	.2	-4.3	-5.4	-3.5	-4.1	-5.1	-4.3	-1.5	-.6	-.4	-.1	-.2	-1.5	-.5	.1	.2	.4	-.2	-.4	-.8	-2.3	-4.4	-6.7	-4.8	-5.1	-6.2	-7.6	-7.2	-6.3	-4.5	-3.1
-.9	-.5	-.5	.3	-.2	.2	-1.6	-7.4	-6.4	-4.6	-4.5	-3.2	-.4	-.2	-.1	.1	-1.3	-2.8	-1.8	-.3	.1	-.3	-1.0	-1.2	-5.2	-7.5	-11.7	-8.9	-7.8	-7.2	-6.8	-2.7	-3.6	-5.5	-4.2	-1.3
-2.8	-2.0	-2.7	-1.4	-1.7	-3.3	-6.9	-11.3	-11.5	-10.1	-5.6	-5.3	-1.7	-.9	-.6	-1.5	-6.8	-6.2	-5.9	-3.7	-2.8	-2.6	-1.2	-1.2	-4.4	-7.0	-13.2	-15.5	-11.2	-13.0	-17.8	-14.7	-10.3	-9.9	-4.7	-3.3
-5.5	-4.6	-3.5	-3.0	-1.8	-1.8	-3.0	-4.5	-6.6	-8.6	-9.7	-9.7	-4.8	-2.8	-3.5	-3.3	-3.6	-1.2	-4.1	-7.9	-8.2	-3.2	-1.3	-3.3	-8.0	-8.8	-7.5	-11.4	-9.1	-8.6	-7.2	-9.2	-10.1	-11.0	-9.1	-7.2
-1.8	-.8	.0	.2	.1	-.1	.0	.3	.5	.3	-1.8	-4.9	-3.6	-1.8	-.5	.2	.3	.1	.0	-1.5	-3.7	-.7	-.8	-3.0	-6.7	-6.0	-6.7	-6.9	-3.8	-1.7	-1.0	-3.2	-6.0	-10.4	-9.1	-5.5
-1.0	.1	.0	.6	.5	.4	.2	.0	.2	-.1	.1	-.1	-1.2	-3.0	-1.5	-1.5	-.6	.2	.4	1.0	.4	-.6	-.3	.4	.4	.1	.0	-.7	-.2	.0	.0	-.3	-.4	-2.6	-2.8	-1.6
-1.6	-3.5	-5.0	-3.0	-1.9	-1.8	-1.5	-1.6	-1.5	-.8	-.8	-1.8	-2.4	-.7	-.4	-.9	-1.2	-.6	-.7	.4	.3	.2	-.9	.1	.2	.2	.2	.2	.0	.3	-.5	-.6	-.2	-.5	-.6	-1.1
-2.2	-2.8	-4.4	-4.6	-4.1	-4.7	-4.6	-4.5	-5.3	-4.6	-5.2	-5.1	-5.5	-5.0	-4.1	-3.4	-3.2	-2.8	-2.5	-2.0	-2.6	-2.4	-1.2	-1.2	-.6	-.5	-.8	-.9	-1.2	-1.1	-1.0	-1.9	-1.9	-2.6	-1.9	-2.1
-3.1	-2.7	-3.0	-3.1	-3.2	-2.9	-3.0	-3.5	-3.1	-3.1	-5.8	-5.7	-5.6	-5.8	-5.3	-5.4	-4.9	-4.7	-5.1	-4.3	-4.3	-4.2	-4.2	-3.9	-3.6	-4.1	-4.6	-5.2	-5.0	-4.2	-3.5	-2.6	-2.2	-3.2	-3.3	-4.0
-4.6	-4.3	-3.5	-4.3	-4.8	-5.0	-4.0	-3.8	-3.1	-2.8	-4.0	-4.3	-4.6	-5.1	-5.3	-6.2	-6.1	-5.6	-6.0	-5.9	-6.1	-6.0	-6.2	-6.1	-6.3	-6.3	-6.9	-7.1	-7.7	-7.0	-6.7	-6.0	-4.5	-4.0	-4.7	-4.9
-7.1	-6.4	-6.5	-6.6	-7.1	-6.4	-6.8	-6.2	-5.3	-5.1	-5.2	-6.0	-7.5	-6.8	-6.7	-6.6	-5.8	-5.8	-5.6	-5.2	-5.2	-5.5	-5.1	-4.8	-6.0	-5.2	-5.1	-6.4	-8.2	-9.2	-9.1	-7.7	-6.5	-6.5	-6.2	-6.5
-4.9	-6.3	-7.1	-8.1	-8.2	-7.7	-7.0	-6.5	-6.6	-5.7	-6.8	-7.1	-8.3	-8.1	-9.0	-8.1	-7.4	-5.0	-3.0	-1.7	-2.1	-2.3	-2.4	-1.4	-2.8	-3.7	-4.0	-4.7	-6.3	-5.4	-4.0	-2.2	-2.6	-2.4	-2.5	-3.7
-5.1	-5.3	-5.7	-5.2	-5.0	-5.4	-5.9	-5.1	-3.8	-2.3	-3.4	-5.0	-5.6	-5.1	-4.4	-3.6	-3.5	-3.8	-3.9	-3.1	-2.0	-2.7	-4.4	-4.0	-3.5	-3.9	-4.6	-4.5	-4.1	-3.4	-3.1	-3.0	-3.5	-1.7	-3.3	-4.8

Figure 46. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS11 (500 - 700 hPa)
NOAA16, using all observations



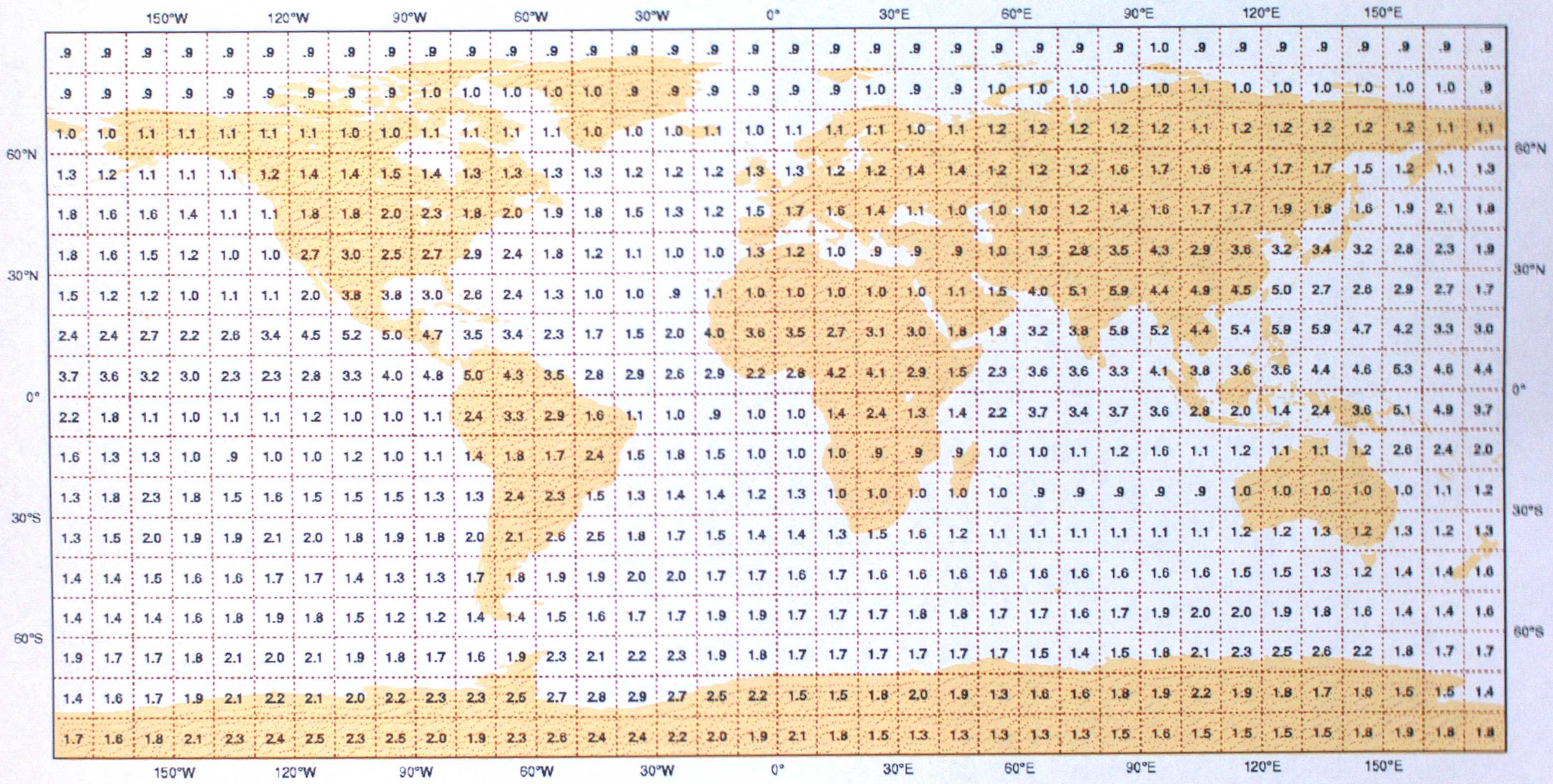
3.0	2.9	3.1	3.2	3.2	3.2	3.1	2.9	3.1	3.2	3.4	3.4	3.1	3.0	3.2	3.1	2.9	2.8	2.7	2.8	2.9	3.0	3.3	3.5	3.5	3.4	3.5	3.9	3.3	3.4	3.4	3.2	3.1	3.0	3.2	3.1
3.4	3.4	3.2	3.3	3.1	2.8	2.9	3.1	3.2	3.9	4.0	4.1	3.5	2.8	2.6	3.1	3.0	2.9	2.8	2.9	3.6	3.3	3.5	3.7	4.2	4.1	3.7	4.0	4.5	4.0	3.9	4.0	4.1	3.7	3.6	3.5
3.9	3.9	4.5	4.6	4.5	4.1	4.1	3.7	4.0	4.3	4.1	4.4	4.5	3.7	3.7	3.8	4.4	3.8	4.1	4.4	4.1	4.0	4.5	5.4	5.6	5.0	5.1	5.0	4.5	4.7	4.9	4.8	5.3	5.1	4.6	4.3
5.0	4.4	4.0	4.0	4.3	5.3	6.5	6.1	6.3	5.9	5.6	5.7	5.4	5.3	4.9	4.7	5.0	5.1	5.0	4.5	4.8	5.7	5.9	5.3	5.7	5.4	7.0	7.4	6.7	6.3	7.4	7.2	5.8	4.5	4.2	5.0
6.3	5.9	5.5	5.1	3.7	3.5	7.1	6.6	7.6	8.5	7.2	7.4	7.1	6.5	5.6	4.8	4.7	6.1	7.0	6.8	6.3	4.0	4.1	3.8	4.3	5.9	6.4	6.1	6.8	6.9	7.5	7.1	5.6	6.7	7.5	6.3
5.7	4.8	5.1	3.9	2.4	2.5	9.0	9.5	7.8	8.4	9.3	8.3	5.6	3.5	2.9	2.7	3.1	5.1	4.2	3.2	2.1	2.1	2.6	2.8	4.0	8.5	9.8	11.2	8.0	9.7	9.4	10.0	9.6	8.4	7.5	6.2
4.5	3.4	3.6	2.1	3.3	2.8	5.6	11.0	11.0	9.3	8.3	8.0	3.8	2.4	2.1	1.6	3.0	3.8	3.2	2.5	2.2	2.3	2.5	3.8	9.9	12.7	14.3	11.3	12.2	11.6	12.5	6.6	7.2	9.0	8.3	5.2
7.3	6.6	7.8	6.2	7.2	9.6	12.1	14.2	14.0	13.3	10.1	10.5	7.0	4.9	3.9	5.6	11.2	10.4	9.8	8.1	8.9	8.6	4.7	4.5	7.9	9.9	14.2	13.3	11.7	14.1	15.2	15.4	12.8	12.1	9.4	8.9
10.9	10.6	9.4	9.0	6.7	6.3	7.6	9.5	11.3	13.2	14.1	12.7	10.6	8.6	9.0	7.9	8.7	6.0	8.4	12.9	12.6	9.1	3.9	6.4	10.7	10.3	9.0	11.2	10.5	9.8	9.7	11.7	12.8	14.4	12.7	12.0
6.2	5.3	2.8	1.8	1.9	2.1	2.3	1.9	1.7	2.4	7.4	10.1	8.6	4.8	3.0	1.7	1.6	1.6	1.7	4.7	8.0	3.4	3.0	6.0	10.7	10.2	10.7	10.2	7.7	5.2	3.4	6.8	10.1	13.9	13.7	10.6
5.1	4.0	4.0	2.2	1.6	1.5	1.6	2.0	1.6	1.8	4.5	5.8	5.4	7.4	4.9	5.1	4.1	1.7	1.5	1.9	1.9	1.9	2.1	2.0	1.7	2.3	2.4	4.1	1.8	2.1	2.3	1.9	2.2	7.0	7.0	5.6
4.9	7.3	8.7	7.0	5.5	5.6	5.3	5.3	5.2	3.9	4.0	7.6	7.6	5.5	3.7	4.5	4.9	3.5	3.9	3.2	3.3	2.6	3.5	2.4	1.4	1.2	1.4	1.7	2.4	2.5	2.8	3.1	2.5	2.9	3.2	3.6
5.6	7.0	8.9	8.2	7.9	8.7	8.2	7.8	8.4	7.3	8.2	9.3	10.5	9.7	7.8	7.1	6.7	6.4	5.7	5.1	6.3	7.0	4.8	4.0	3.8	3.3	3.7	3.8	4.4	5.1	4.6	5.2	5.0	6.3	5.4	5.7
6.2	5.7	6.7	6.7	6.9	6.8	6.7	6.1	5.5	6.2	8.3	8.8	8.8	8.6	8.3	8.4	7.9	7.6	7.6	7.2	7.0	6.8	6.6	6.2	6.3	6.7	6.9	7.7	7.6	7.1	6.7	5.6	5.2	6.2	6.2	7.4
6.1	5.8	5.8	7.0	7.6	7.4	6.5	5.4	4.7	4.4	6.1	6.3	6.7	6.6	7.0	7.5	7.4	6.5	6.9	6.8	6.8	6.7	7.2	7.0	7.0	7.0	7.7	8.4	8.9	8.4	8.2	7.5	6.2	5.7	6.2	6.7
7.0	6.4	6.8	7.2	8.0	7.2	7.3	6.6	5.9	5.6	5.5	7.8	9.3	7.4	7.2	6.5	5.6	5.6	5.6	5.7	5.4	5.9	6.1	6.3	5.7	5.2	5.6	7.1	8.3	8.9	9.5	9.0	7.6	6.4	6.5	6.4
4.2	4.8	5.6	6.9	7.8	7.7	7.2	7.2	7.8	7.4	8.0	9.1	9.1	8.8	8.6	7.8	7.9	6.6	4.7	4.9	6.7	6.4	5.3	3.4	5.6	5.6	4.9	5.2	5.7	5.2	4.4	3.6	3.7	4.0	5.8	4.2
5.4	5.5	6.3	7.6	8.0	8.3	8.0	6.9	6.9	6.2	5.8	7.6	8.8	8.1	7.1	5.8	4.7	4.1	4.0	3.7	3.6	3.5	3.8	4.0	3.7	3.5	3.8	3.7	3.6	3.4	3.6	4.0	4.9	6.0	6.4	5.7

Figure 47. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS4 (400 hPa)
NOAA16, using all observations



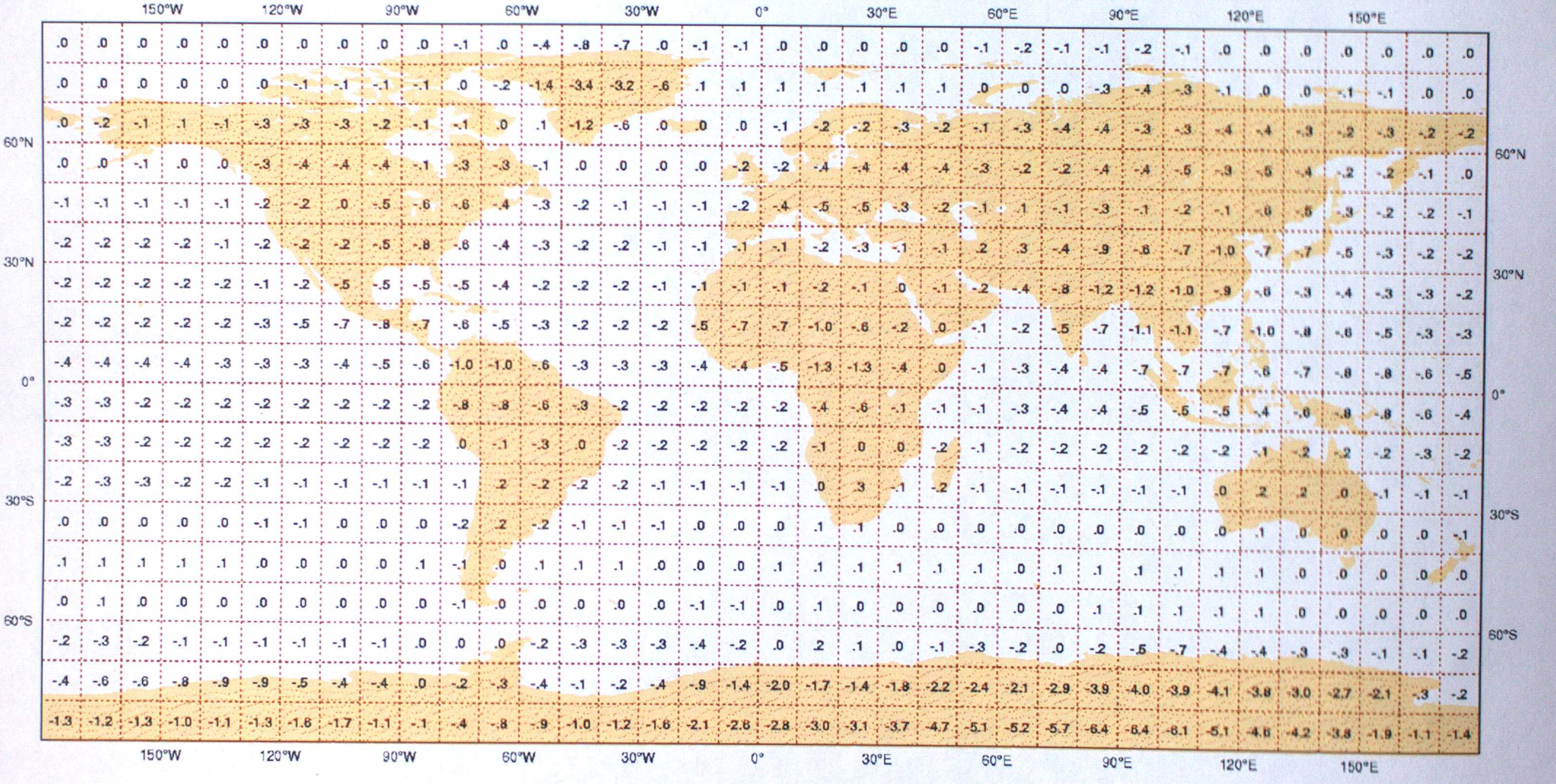
.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.1	.1	.1	.1	.1	.1	.1	.0	.1	.1	.1	.1	.1	.1	.1	.1
.0	.1	.1	.1	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.1	.0	.0	.0	.0	-.1	-.1	.0	-.1	-.1	-.1	.0	-.1	.0	.1	.0	.1
-.1	-.1	-.2	-.2	-.1	.0	.0	.0	.0	-.1	-.1	-.1	-.1	-.1	.0	.0	-.1	-.1	-.2	-.2	-.1	.0	.0	-.2	-.2	-.1	-.1	-.2	-.1	-.1	-.1	-.2	-.3	-.2	-.2	.0
-.2	-.2	-.1	-.1	-.2	-.3	-.5	-.4	-.4	-.3	-.3	-.4	-.3	-.3	-.2	-.2	-.2	-.3	-.3	-.2	-.1	-.2	-.2	-.1	-.1	-.1	-.5	-.7	-.5	-.3	-.6	-.6	-.3	-.2	-.1	-.2
-.8	-.8	-.5	-.4	-.2	.0	-.5	-.6	-.6	-.9	-.7	-.9	-.9	-.7	-.5	-.3	-.2	-.4	-.4	-.3	-.2	.0	-.1	.0	.0	-.2	-.4	-.5	-.7	-.6	-.7	-.7	-.5	-.8	-1.1	-.8
-.7	-.6	-.4	-.1	.1	.1	-1.1	-1.4	-1.0	-1.1	-1.5	-1.1	-.3	.0	.0	.1	.1	-.1	.0	.1	.2	.2	.1	.0	.0	-.8	-1.5	-2.3	-1.2	-1.6	-1.7	-2.5	-2.3	-1.6	-1.2	-.8
-.1	.0	.0	.2	.0	.1	-.5	-2.2	-2.1	-1.4	-1.2	-.8	.0	.2	.2	.2	.1	.1	.1	.1	.1	.0	-.2	-.5	-1.9	-3.2	-5.1	-3.5	-3.1	-2.8	-2.8	-1.1	-1.2	-1.5	-1.1	-.2
-.9	-.6	-.8	-.5	-.6	-1.3	-2.6	-4.2	-4.2	-3.6	-1.8	-1.7	-.6	-.1	-.1	-.4	-1.9	-1.6	-1.6	-.8	-1.2	-1.2	-.5	-.7	-2.1	-3.0	-5.6	-6.0	-4.3	-5.1	-7.2	-5.7	-4.1	-3.4	-1.7	-1.0
-1.8	-1.6	-1.3	-1.0	-.6	-.5	-.9	-1.5	-2.2	-2.9	-3.4	-2.9	-1.5	-.8	-1.0	-.8	-1.0	-.6	-1.2	-2.4	-2.6	-1.3	-.6	-1.3	-3.0	-3.2	-2.9	-4.1	-3.1	-2.8	-2.6	-3.2	-3.5	-4.0	-3.3	-2.6
-.5	-.1	.2	.3	.2	.2	.2	.2	.3	.2	-.5	-1.3	-.9	-.1	.2	.3	.3	.3	.3	.0	-.5	-.1	-.3	-1.1	-2.3	-2.1	-2.3	-2.4	-1.2	-.5	-.1	-.8	-1.9	-3.8	-3.3	-1.8
-.1	.1	.1	.3	.3	.3	.3	.2	.2	.2	.1	.0	.0	-.5	-.1	-.2	.0	.2	.3	.3	.2	.3	.3	.2	.2	.2	.1	.0	.1	.2	.2	.2	.1	-.7	-.7	-.3
-.1	-.5	-1.0	-.5	-.3	-.3	-.1	-.1	-.1	.0	.1	-.5	-.6	.0	.1	.0	.0	.1	.1	.3	.2	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.1	.0
-.1	-.2	-.6	-.6	-.6	-.7	-.6	-.5	-.6	-.5	-.7	-.8	-.9	-.9	-.5	-.4	-.3	-.1	.0	.0	-.3	-.2	.1	.2	.2	.3	.2	.3	.2	.1	.1	.0	.1	.0	.0	.0
-.1	.0	-.1	-.1	-.1	-.1	-.1	-.1	.0	.1	-.4	-.6	-.6	-.6	-.5	-.5	-.4	-.3	-.2	-.2	-.3	-.3	-.3	-.2	-.2	-.2	-.3	-.3	-.3	-.2	-.2	.0	.0	-.1	-.2	-.3
-.1	.0	.1	-.1	-.3	-.3	-.2	-.1	.2	.3	.1	.0	-.1	-.2	-.2	-.3	-.4	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.3	-.2	-.3	-.4	-.6	-.6	-.6	-.5	-.3	-.1	-.2	-.2
-.4	-.3	-.4	-.5	-.7	-.5	-.6	-.5	-.3	-.2	-.1	-.3	-.7	-.6	-.6	-.6	-.3	-.2	-.2	-.1	-.1	-.1	-.2	-.1	-.1	.0	.0	-.3	-.8	-1.0	-1.1	-1.0	-.7	-.4	-.4	-.3
-.1	-.2	-.4	-.7	-.9	-1.0	-.8	-.7	-.9	-.9	-.9	-1.1	-1.3	-1.3	-1.6	-1.5	-1.4	-1.1	-.4	-.2	-.2	-.3	-.3	.0	-.3	-.4	-.5	-.7	-1.1	-.9	-.7	-.4	-.3	-.2	-.2	-.1
-.3	-.3	-.5	-.7	-.8	-.9	-1.1	-1.0	-1.0	-.8	-.8	-.9	-1.1	-1.0	-1.0	-.8	-.7	-.6	-.8	-.5	-.2	-.2	-.2	-.1	-.1	-.3	-.5	-.7	-.6	-.4	-.3	-.3	-.4	-.3	-.3	-.3

Figure 48. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS4 (400 hPa)
NOAA16, using all observations



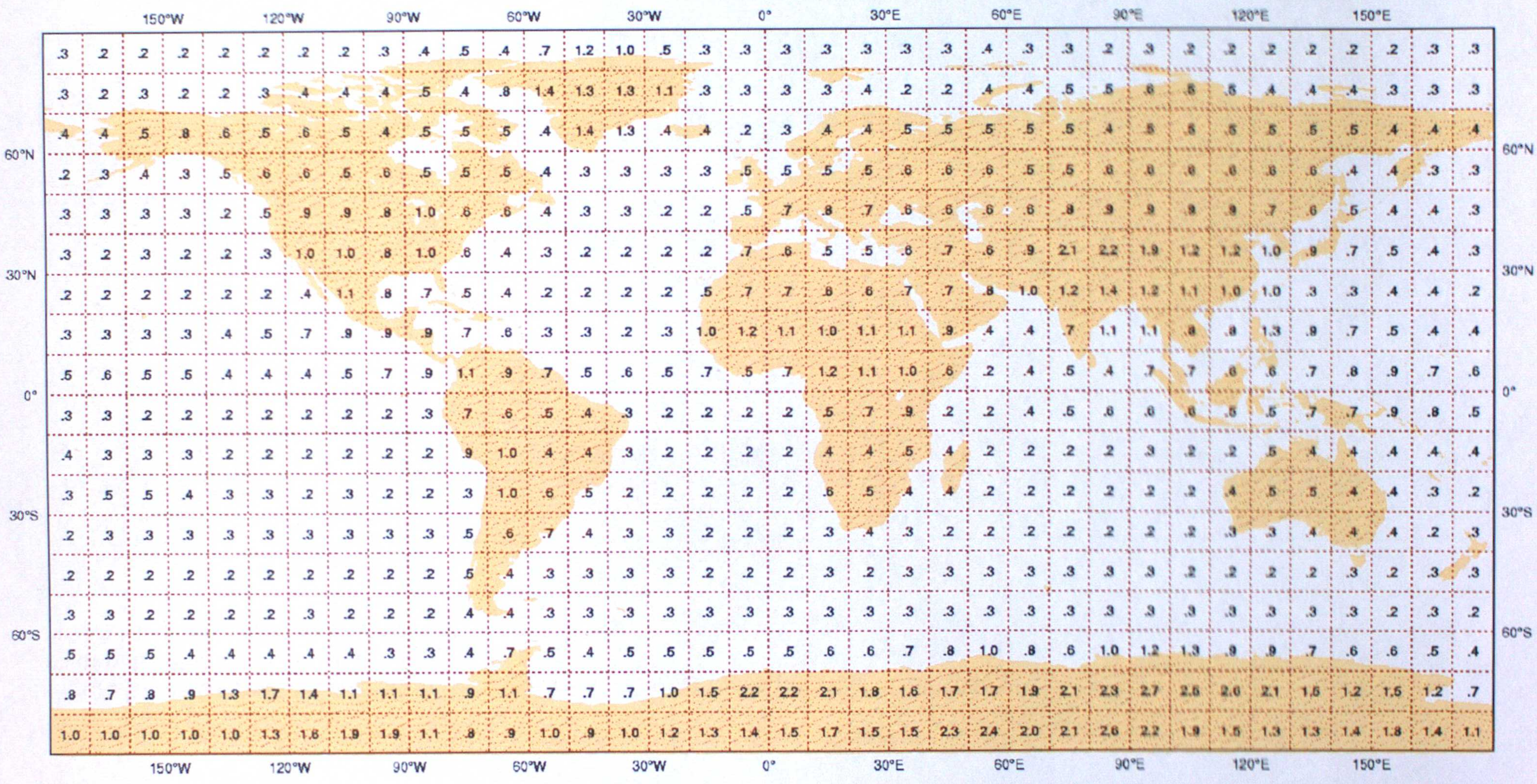
.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	.9	1.0	.9	.9	.9	.9	.9	.9	.9	.9
.9	.9	.9	.9	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0	.9	.9	.9	.9	.9	.9	1.0	.9	.9	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	.9
1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.1	1.0	1.1	1.1	1.1	1.0	1.1	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.2	1.2	1.2	1.2	1.1	1.1
1.3	1.2	1.1	1.1	1.1	1.2	1.4	1.4	1.5	1.4	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.3	1.3	1.2	1.2	1.4	1.4	1.2	1.2	1.2	1.6	1.7	1.6	1.4	1.7	1.7	1.5	1.2	1.1	1.3
1.8	1.6	1.6	1.4	1.1	1.1	1.8	1.8	2.0	2.3	1.8	2.0	1.9	1.8	1.5	1.3	1.2	1.5	1.7	1.6	1.4	1.1	1.0	1.0	1.0	1.2	1.4	1.6	1.7	1.7	1.9	1.8	1.6	1.9	2.1	1.8
1.8	1.6	1.5	1.2	1.0	1.0	2.7	3.0	2.5	2.7	2.9	2.4	1.8	1.2	1.1	1.0	1.0	1.3	1.2	1.0	.9	.9	.9	1.0	1.3	2.8	3.5	4.3	2.9	3.6	3.2	3.4	3.2	2.8	2.3	1.9
1.5	1.2	1.2	1.0	1.1	1.1	2.0	3.8	3.8	3.0	2.6	2.4	1.3	1.0	1.0	.9	1.1	1.0	1.0	1.0	1.0	1.0	1.1	1.5	4.0	5.1	5.9	4.4	4.9	4.5	5.0	2.7	2.6	2.9	2.7	1.7
2.4	2.4	2.7	2.2	2.6	3.4	4.5	5.2	5.0	4.7	3.5	3.4	2.3	1.7	1.5	2.0	4.0	3.6	3.5	2.7	3.1	3.0	1.8	1.9	3.2	3.8	5.8	5.2	4.4	5.4	5.9	5.9	4.7	4.2	3.3	3.0
3.7	3.6	3.2	3.0	2.3	2.3	2.8	3.3	4.0	4.8	5.0	4.3	3.5	2.8	2.9	2.6	2.9	2.2	2.8	4.2	4.1	2.9	1.5	2.3	3.6	3.6	3.3	4.1	3.8	3.6	3.6	4.4	4.6	5.3	4.6	4.4
2.2	1.8	1.1	1.0	1.1	1.1	1.2	1.0	1.0	1.1	2.4	3.3	2.9	1.6	1.1	1.0	.9	1.0	1.0	1.4	2.4	1.3	1.4	2.2	3.7	3.4	3.7	3.6	2.8	2.0	1.4	2.4	3.6	5.1	4.9	3.7
1.6	1.3	1.3	1.0	.9	1.0	1.0	1.2	1.0	1.1	1.4	1.8	1.7	2.4	1.5	1.8	1.5	1.0	1.0	1.0	.9	.9	.9	1.0	1.0	1.1	1.2	1.6	1.1	1.2	1.1	1.1	1.2	2.6	2.4	2.0
1.3	1.8	2.3	1.8	1.5	1.6	1.5	1.5	1.5	1.3	1.3	2.4	2.3	1.5	1.3	1.4	1.4	1.2	1.3	1.0	1.0	1.0	1.0	1.0	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0	1.1	1.2
1.3	1.5	2.0	1.9	1.9	2.1	2.0	1.8	1.9	1.8	2.0	2.1	2.6	2.5	1.8	1.7	1.5	1.4	1.4	1.3	1.5	1.6	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.3	1.2	1.3	1.2	1.3
1.4	1.4	1.5	1.6	1.6	1.7	1.7	1.4	1.3	1.3	1.7	1.8	1.9	1.9	2.0	2.0	1.7	1.7	1.6	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.3	1.2	1.4	1.4	1.6
1.4	1.4	1.4	1.6	1.8	1.9	1.8	1.5	1.2	1.2	1.4	1.4	1.5	1.6	1.7	1.7	1.9	1.9	1.7	1.7	1.7	1.8	1.8	1.7	1.7	1.6	1.7	1.9	2.0	2.0	1.9	1.8	1.6	1.4	1.4	1.6
1.9	1.7	1.7	1.8	2.1	2.0	2.1	1.9	1.8	1.7	1.6	1.9	2.3	2.1	2.2	2.3	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.5	1.4	1.5	1.8	2.1	2.3	2.5	2.6	2.2	1.8	1.7	1.7
1.4	1.6	1.7	1.9	2.1	2.2	2.1	2.0	2.2	2.3	2.3	2.5	2.7	2.8	2.9	2.7	2.5	2.2	1.5	1.5	1.8	2.0	1.9	1.3	1.6	1.6	1.8	1.9	2.2	1.9	1.8	1.7	1.6	1.5	1.5	1.4
1.7	1.6	1.8	2.1	2.3	2.4	2.5	2.3	2.5	2.0	1.9	2.3	2.6	2.4	2.4	2.2	2.0	1.9	2.1	1.8	1.5	1.3	1.3	1.3	1.3	1.3	1.5	1.6	1.5	1.5	1.5	1.5	1.8	1.9	1.8	1.8

Figure 49. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-5 (700 hPa)
NOAA16, using all observations



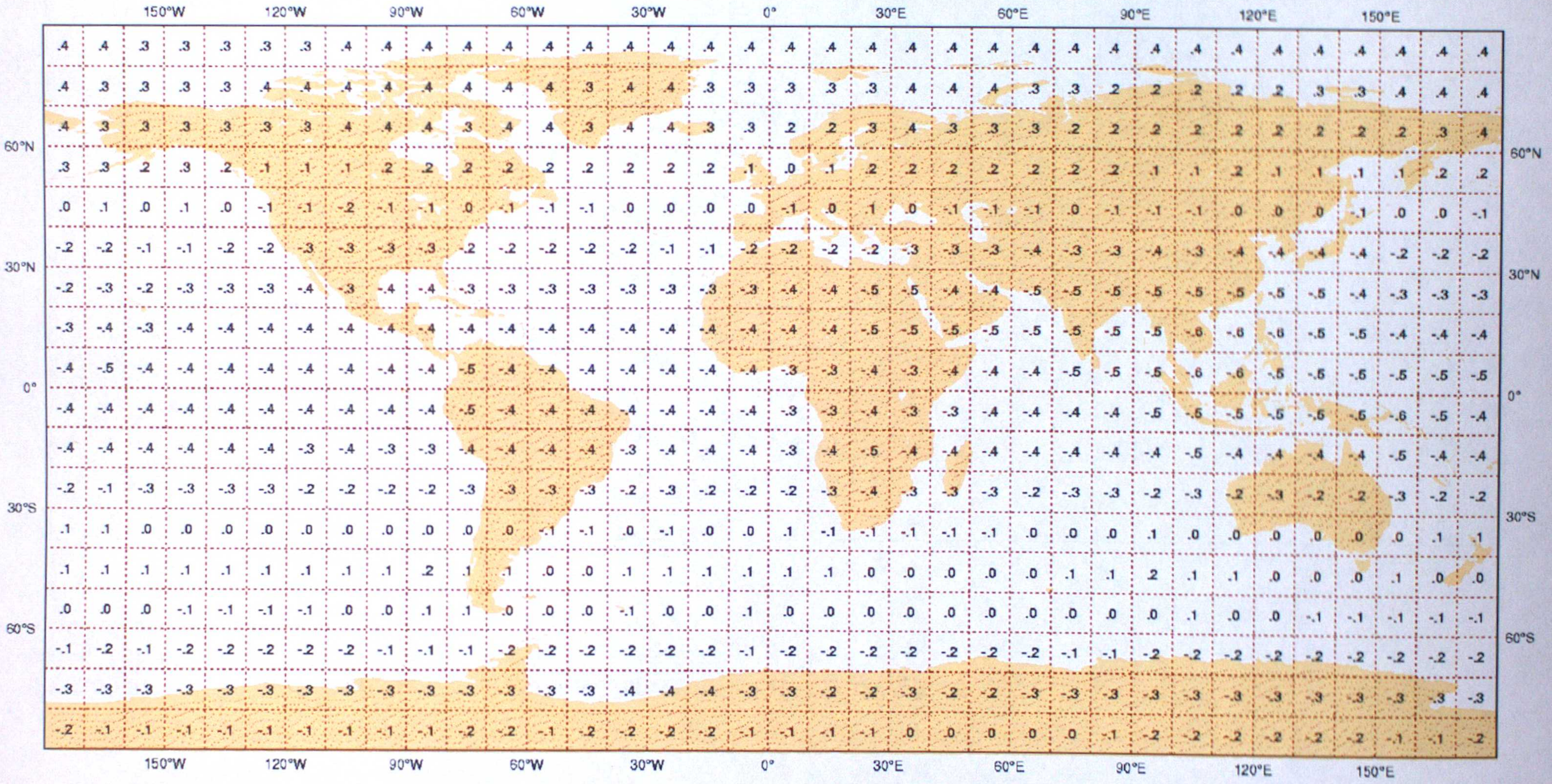
.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	-.1	.0	-.4	-.8	-.7	.0	-.1	-.1	.0	.0	.0	.0	.0	-.1	-.2	-.1	-.1	-.2	-.1	.0	.0	.0	.0	.0	.0	.0
.0	.0	.0	.0	.0	.0	-.1	-.1	-.1	-.1	.0	-.2	-1.4	-3.4	-3.2	-.6	.1	.1	.1	.1	.1	.1	.1	.0	.0	.0	-.3	-.4	-.3	-.1	.0	.0	-.1	-.1	.0	.0
.0	-.2	-.1	.1	-.1	-.3	-.3	-.3	-.2	-.1	-.1	.0	.1	-1.2	-.6	.0	.0	.0	-.1	-.2	-.2	-.3	-.2	-.1	-.3	-.4	-.4	-.3	-.3	-.4	-.4	-.3	-.2	-.3	-.2	-.2
.0	.0	-.1	.0	.0	-.3	-.4	-.4	-.4	-.1	-.3	-.3	-.1	.0	.0	.0	.0	-.2	-.2	-.4	-.4	-.4	-.4	-.3	-.2	-.2	-.4	-.4	-.5	-.3	-.5	-.4	-.2	-.2	-.1	.0
-.1	-.1	-.1	-.1	-.1	-.2	-.2	.0	-.5	-.6	-.6	-.4	-.3	-.2	-.1	-.1	-.1	-.2	-.4	-.5	-.5	-.3	-.2	-.1	.1	-.1	-.3	-.1	-.2	-.1	-.6	-.5	-.3	-.2	-.2	-.1
-.2	-.2	-.2	-.2	-.1	-.2	-.2	-.2	-.5	-.8	-.6	-.4	-.3	-.2	-.2	-.1	-.1	-.1	-.1	-.2	-.3	-.1	-.1	.2	.3	-.4	-.9	-.6	-.7	-1.0	-.7	-.7	-.5	-.3	-.2	-.2
-.2	-.2	-.2	-.2	-.2	-.1	-.2	-.5	-.5	-.5	-.5	-.4	-.2	-.2	-.2	-.1	-.1	-.1	-.1	-.2	-.1	.0	-.1	-.2	-.4	-.8	-1.2	-1.2	-1.0	-.9	-.6	-.3	-.4	-.3	-.3	-.2
-.2	-.2	-.2	-.2	-.2	-.3	-.5	-.7	-.8	-.7	-.6	-.5	-.3	-.2	-.2	-.2	-.5	-.7	-.7	-1.0	-.6	-.2	.0	-.1	-.2	-.5	-.7	-1.1	-1.1	-.7	-1.0	-.8	-.6	-.5	-.3	-.3
-.4	-.4	-.4	-.4	-.3	-.3	-.3	-.4	-.5	-.6	-1.0	-1.0	-.6	-.3	-.3	-.3	-.4	-.4	-.5	-1.3	-1.3	-.4	.0	-.1	-.3	-.4	-.4	-.7	-.7	-.7	-.6	-.7	-.8	-.8	-.6	-.5
-.3	-.3	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.8	-.8	-.6	-.3	-.2	-.2	-.2	-.2	-.2	-.4	-.6	-.1	-.1	-.1	-.3	-.4	-.4	-.5	-.5	-.5	-.4	-.6	-.8	-.8	-.6	-.4
-.3	-.3	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	.0	-.1	-.3	.0	-.2	-.2	-.2	-.2	-.2	-.1	.0	.0	-.2	-.1	-.2	-.2	-.2	-.2	-.2	-.2	-.1	-.2	-.2	-.2	-.3	-.2
-.2	-.3	-.3	-.2	-.2	-.1	-.1	-.1	-.1	-.1	-.1	.2	-.2	-.2	-.2	-.1	-.1	-.1	-.1	.0	.3	-.1	-.2	-.1	-.1	-.1	-.1	-.1	-.1	.0	.2	.2	.0	-.1	-.1	-.1
.0	.0	.0	.0	.0	-.1	-.1	.0	.0	.0	-.2	.2	-.2	-.1	-.1	-.1	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	-.1
.1	.1	.1	.1	.1	.0	.0	.0	.0	.1	-.1	.0	.1	.1	.1	.0	.0	.0	.1	.1	.1	.1	.1	.1	.0	.1	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0
.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	-.1	.0	.0	.0	.0	.0	-.1	-.1	.0	.1	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0
-.2	-.3	-.2	-.1	-.1	-.1	-.1	-.1	-.1	.0	.0	.0	-.2	-.3	-.3	-.3	-.4	-.2	.0	.2	.1	.0	-.1	-.3	-.2	.0	-.2	-.5	-.7	-.4	-.4	-.3	-.3	-.1	-.1	-.2
-.4	-.6	-.6	-.8	-.9	-.9	-.5	-.4	-.4	.0	-.2	-.3	-.4	-.1	-.2	-.4	-.9	-1.4	-2.0	-1.7	-1.4	-1.8	-2.2	-2.4	-2.1	-2.9	-3.9	-4.0	-3.9	-4.1	-3.8	-3.0	-2.7	-2.1	-.3	-.2
-1.3	-1.2	-1.3	-1.0	-1.1	-1.3	-1.6	-1.7	-1.1	-.1	-.4	-.8	-.9	-1.0	-1.2	-1.6	-2.1	-2.8	-2.8	-3.0	-3.1	-3.7	-4.7	-5.1	-5.2	-5.7	-6.4	-6.4	-6.1	-5.1	-4.8	-4.2	-3.8	-1.9	-1.1	-1.4

Figure 50. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-5 (700 hPa)
NOAA16, using all observations



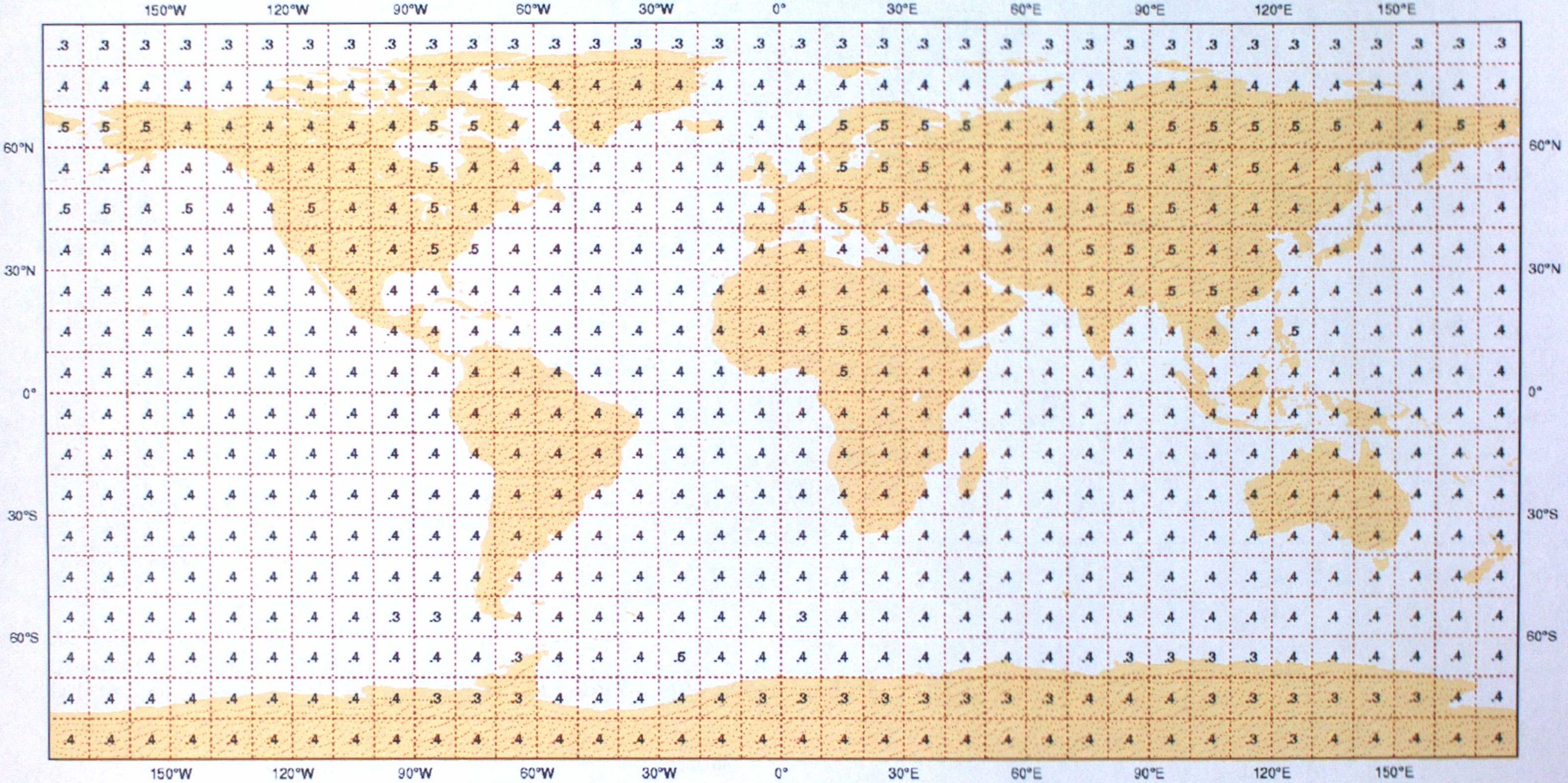
.3	.2	.2	.2	.2	.2	.2	.2	.3	.4	.5	.4	.7	1.2	1.0	.5	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3	.2	.3	.2	.2	.2	.2	.2	.2	.3	.3
.3	.2	.3	.2	.2	.3	.4	.4	.4	.5	.4	.8	1.4	1.3	1.3	1.1	.3	.3	.3	.3	.4	.2	.2	.4	.4	.5	.5	.6	.6	.5	.4	.4	.4	.3	.3	.3
.4	.4	.5	.8	.6	.5	.6	.5	.4	.5	.5	.5	.4	1.4	1.3	.4	.4	.2	.3	.4	.4	.5	.5	.5	.5	.5	.4	.5	.5	.5	.5	.5	.5	.4	.4	.4
.2	.3	.4	.3	.5	.6	.6	.5	.6	.5	.5	.5	.4	.3	.3	.3	.3	.5	.5	.5	.5	.6	.6	.6	.5	.5	.6	.6	.6	.6	.6	.6	.4	.4	.3	.3
.3	.3	.3	.3	.2	.5	.9	.9	.8	1.0	.6	.6	.4	.3	.3	.2	.2	.5	.7	.8	.7	.6	.6	.6	.6	.8	.9	.9	.9	.9	.7	.6	.5	.4	.4	.3
.3	.2	.3	.2	.2	.3	1.0	1.0	.8	1.0	.6	.4	.3	.2	.2	.2	.2	.7	.6	.5	.5	.6	.7	.6	.9	2.1	2.2	1.9	1.2	1.2	1.0	.9	.7	.5	.4	.3
.2	.2	.2	.2	.2	.2	.4	1.1	.8	.7	.5	.4	.2	.2	.2	.2	.5	.7	.7	.8	.6	.7	.7	.8	1.0	1.2	1.4	1.2	1.1	1.0	1.0	.3	.3	.4	.4	.2
.3	.3	.3	.3	.4	.5	.7	.9	.9	.9	.7	.6	.3	.3	.2	.3	1.0	1.2	1.1	1.0	1.1	1.1	.9	.4	.4	.7	1.1	1.1	.8	.8	1.3	.9	.7	.5	.4	.4
.5	.6	.5	.5	.4	.4	.4	.5	.7	.9	1.1	.9	.7	.5	.6	.5	.7	.5	.7	1.2	1.1	1.0	.6	.2	.4	.5	.4	.7	.7	.6	.6	.7	.8	.9	.7	.6
.3	.3	.2	.2	.2	.2	.2	.2	.2	.3	.7	.6	.5	.4	.3	.2	.2	.2	.2	.5	.7	.9	.2	.2	.4	.5	.6	.6	.6	.5	.5	.7	.7	.9	.8	.5
.4	.3	.3	.3	.2	.2	.2	.2	.2	.2	.9	1.0	.4	.4	.3	.2	.2	.2	.2	.4	.4	.5	.4	.2	.2	.2	.2	.3	.2	.2	.5	.4	.4	.4	.4	.4
.3	.5	.5	.4	.3	.3	.2	.3	.2	.2	.3	1.0	.6	.5	.2	.2	.2	.2	.2	.6	.5	.4	.4	.2	.2	.2	.2	.2	.2	.4	.5	.5	.4	.4	.3	.2
.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.5	.6	.7	.4	.3	.3	.2	.2	.2	.3	.4	.3	.2	.2	.2	.2	.2	.2	.2	.3	.3	.4	.4	.4	.2	.3
.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.5	.4	.3	.3	.3	.3	.2	.2	.2	.3	.2	.3	.3	.3	.3	.3	.3	.3	.2	.2	.2	.2	.3	.2	.3	.3
.3	.3	.2	.2	.2	.2	.3	.2	.2	.2	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	.2
.5	.5	.5	.4	.4	.4	.4	.4	.3	.3	.4	.7	.5	.4	.5	.5	.5	.5	.5	.6	.6	.7	.8	1.0	.8	.6	1.0	1.2	1.3	.9	.9	.7	.6	.6	.5	.4
.8	.7	.8	.9	1.3	1.7	1.4	1.1	1.1	1.1	.9	1.1	.7	.7	.7	1.0	1.5	2.2	2.2	2.1	1.8	1.6	1.7	1.7	1.9	2.1	2.3	2.7	2.6	2.0	2.1	1.5	1.2	1.5	1.2	.7
1.0	1.0	1.0	1.0	1.0	1.3	1.6	1.9	1.9	1.1	.8	.9	1.0	.9	1.0	1.2	1.3	1.4	1.5	1.7	1.5	1.5	2.3	2.4	2.0	2.1	2.6	2.2	1.9	1.5	1.3	1.3	1.4	1.8	1.4	1.1

Figure 51. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-7 (300 hPa)
NOAA16, using all observations



.4	.4	.3	.3	.3	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.3	.3	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.3	.3	.3	.3	.3	.4	.4	.4	.3	.3	.2	.2	.2	.2	.2	.3	.3	.4	.4	.4
.4	.3	.3	.3	.3	.3	.3	.4	.4	.4	.3	.4	.4	.3	.4	.4	.3	.3	.2	.2	.3	.4	.3	.3	.3	.2	.2	.2	.2	.2	.2	.2	.2	.2	.3	.4
.3	.3	.2	.3	.2	.1	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2	.1	.0	.1	.2	.2	.2	.2	.2	.2	.2	.1	.1	.2	.1	.1	.1	.1	.2	.2
.0	.1	.0	.1	.0	-.1	-.1	-.2	-.1	-.1	.0	-.1	-.1	-.1	.0	.0	.0	.0	-.1	.0	.1	.0	-.1	-.1	-.1	.0	-.1	-.1	-.1	.0	.0	.0	-.1	.0	.0	-.1
-.2	-.2	-.1	-.1	-.2	-.2	-.3	-.3	-.3	-.3	-.2	-.2	-.2	-.2	-.2	-.1	-.1	-.2	-.2	-.2	-.2	-.3	-.3	-.3	-.4	-.3	-.3	-.4	-.3	-.4	-.4	-.4	-.4	-.2	-.2	-.2
-.2	-.3	-.2	-.3	-.3	-.3	-.4	-.3	-.4	-.4	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.4	-.4	-.5	-.5	-.4	-.4	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.4	-.3	-.3	-.3
-.3	-.4	-.3	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.6	-.6	-.5	-.5	-.4	-.4	-.4
-.4	-.5	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.5	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.3	-.3	-.4	-.3	-.4	-.4	-.4	-.5	-.5	-.5	-.6	-.6	-.5	-.5	-.5	-.5	-.5	-.5
-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.5	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.3	-.3	-.4	-.3	-.3	-.4	-.4	-.4	-.4	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.5	-.4
-.4	-.4	-.4	-.4	-.4	-.4	-.3	-.4	-.3	-.3	-.4	-.4	-.4	-.4	-.3	-.4	-.4	-.4	-.3	-.4	-.5	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.5	-.4	-.4	-.4	-.4	-.5	-.4	-.4
-.2	-.1	-.3	-.3	-.3	-.3	-.2	-.2	-.2	-.2	-.3	-.3	-.3	-.3	-.2	-.3	-.2	-.2	-.2	-.3	-.4	-.3	-.3	-.3	-.2	-.3	-.3	-.2	-.3	-.2	-.3	-.2	-.2	-.3	-.2	-.2
.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	-.1	-.1	.0	-.1	.0	.0	.1	-.1	-.1	-.1	-.1	-.1	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.1	.1
.1	.1	.1	.1	.1	.1	.1	.1	.1	.2	.1	.1	.0	.0	.1	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.1	.1	.2	.1	.1	.0	.0	.0	.1	.0	.0
.0	.0	.0	-.1	-.1	-.1	-.1	.0	.0	.1	.1	.0	.0	.0	-.1	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	-.1	-.1	-.1	-.1	-.1
-.1	-.2	-.1	-.2	-.2	-.2	-.2	-.2	-.1	-.1	-.1	-.2	-.2	-.2	-.2	-.2	-.2	-.1	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.1	-.1	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2
-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.4	-.4	-.4	-.3	-.3	-.2	-.2	-.3	-.2	-.2	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3
-.2	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.2	-.2	-.1	-.2	-.2	-.2	-.2	-.1	-.1	-.1	-.1	.0	.0	.0	.0	.0	-.1	-.2	-.2	-.2	-.2	-.2	-.2	-.1	-.1	-.2

Figure 52. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-7 (300 hPa)
NOAA16, using all observations



.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.5	.5	.5	.4	.4	.4	.4	.4	.4	.5	.5	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.5	.4	.4	.4	.4	.5	.5	.5	.5	.5	.4	.4	.5	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.4	.4	.4	.4	.5	.4	.4	.5	.4	.4	.4	.4	.4	.4
.5	.5	.4	.5	.4	.4	.5	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.4	.4	.5	.4	.4	.5	.5	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.5	.5	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.3	.3	.3	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.3	.3	.4	.4	.4	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.4	.3	.3	.3	.3	.3	.3	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.3	.4	.4	.4	.4	.4

Figure 53. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-9 (100 hPa)
NOAA16, using all observations

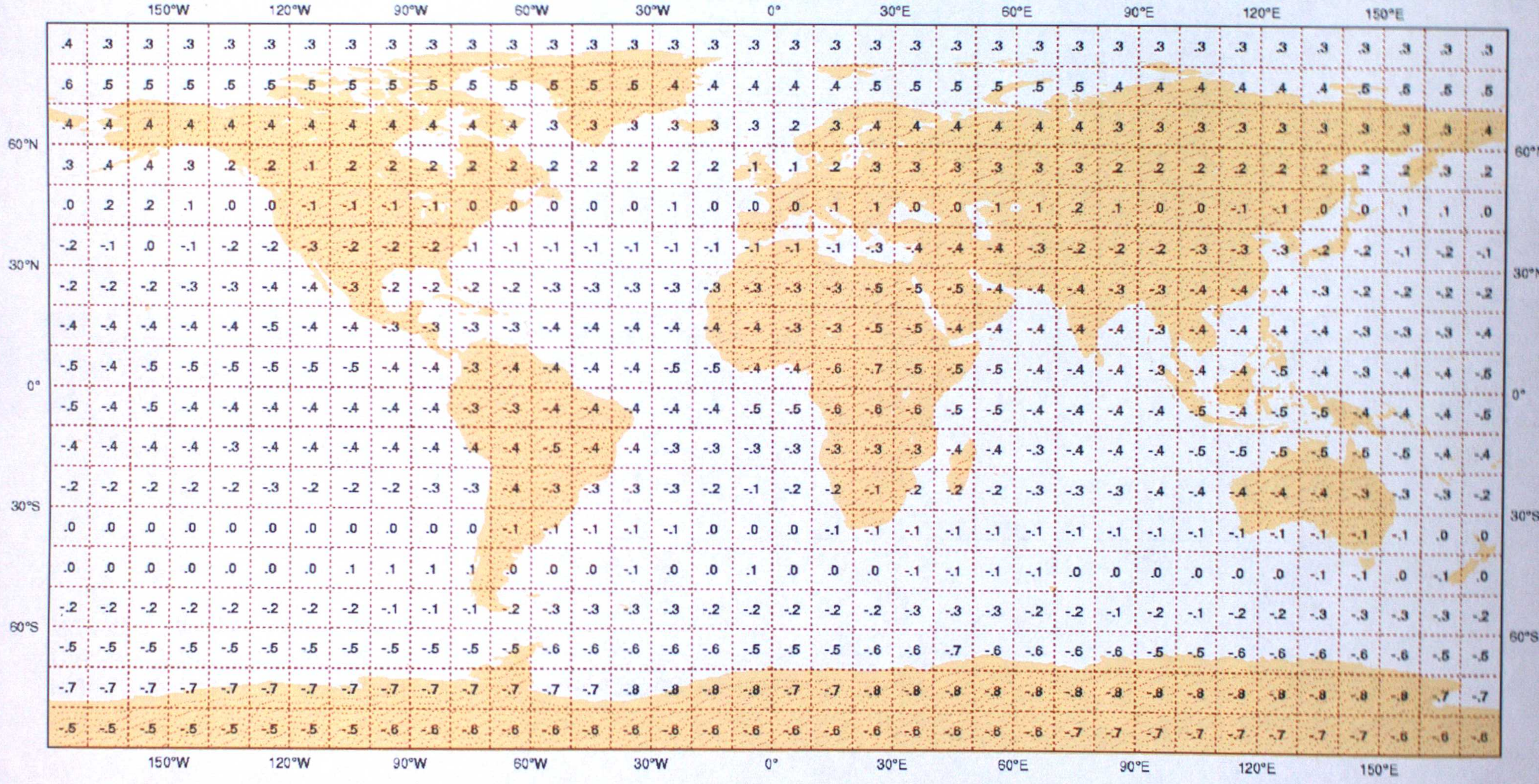
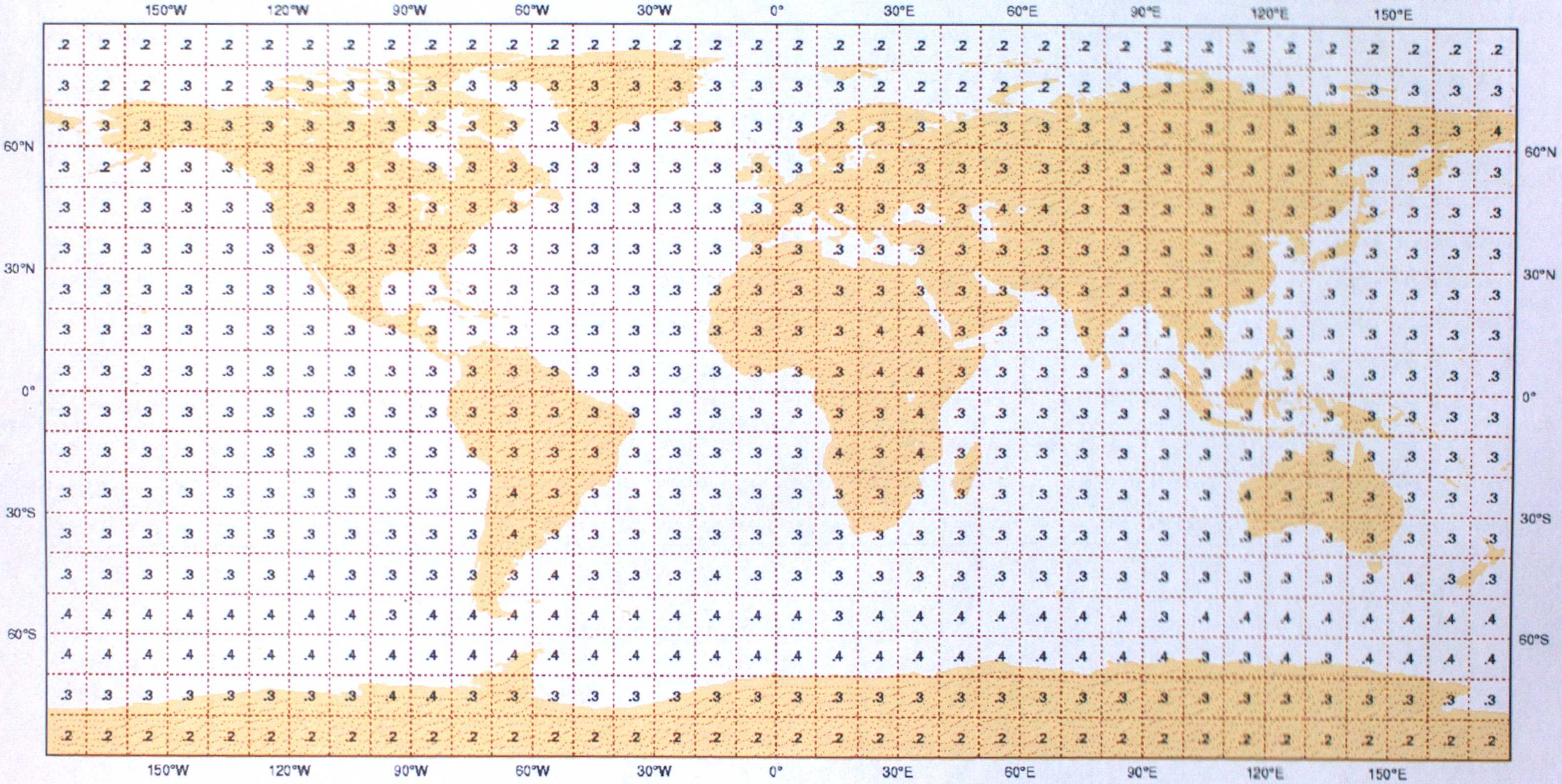
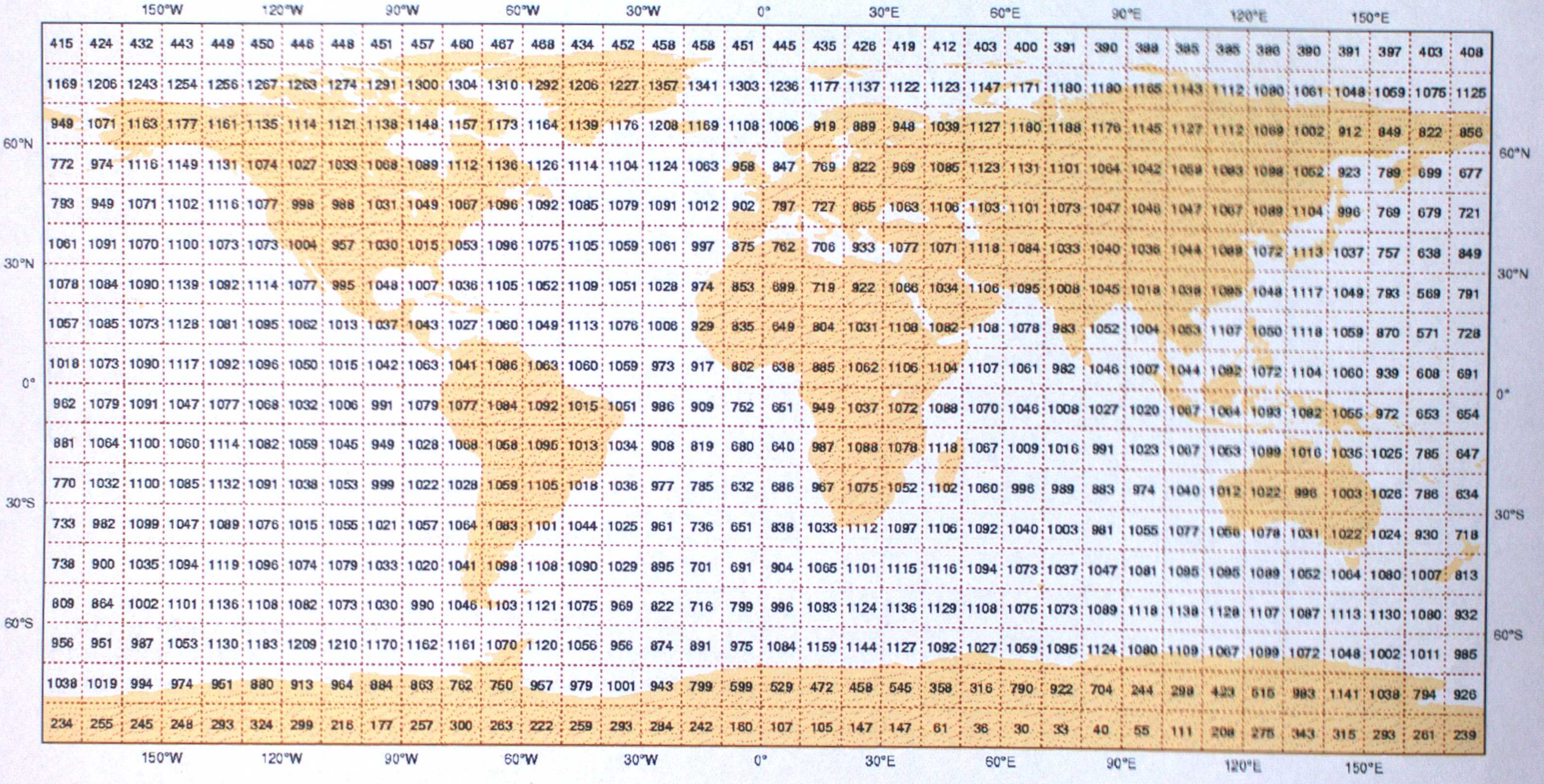

150°W 120°W 90°W 60°W 30°W 0° 30°E 60°E 90°E 120°E 150°E
60°N
30°N
0°
30°S
60°S
.4 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3
.6 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .4 .4 .4 .4 .4 .5 .5 .5 .5 .5 .5 .4 .4 .4 .4 .4 .4 .5 .5 .5 .5
.4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .3 .3 .3 .3 .3 .3 .2 .3 .4 .4 .4 .4 .4 .4 .3 .3 .3 .3 .3 .3 .3 .3 .3 .4
.3 .4 .4 .3 .2 .2 .1 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .1 .1 .2 .3 .3 .3 .3 .3 .3 .2 .2 .2 .2 .2 .2 .2 .2 .3 .2
.0 .2 .2 .1 .0 .0 -.1 -.1 -.1 -.1 .0 .0 .0 .0 .0 .1 .0 .0 .0 .1 .1 .0 .0 .1 .1 .2 .1 .0 .0 -.1 -.1 .0 .0 .1 .1 .0
-.2 -.1 .0 -.1 -.2 -.2 -.3 -.2 -.2 -.2 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.3 -.4 -.4 -.4 -.3 -.2 -.2 -.2 -.3 -.3 -.3 -.2 -.2 -.1 -.2 -.1
-.2 -.2 -.2 -.3 -.3 -.4 -.4 -.3 -.2 -.2 -.2 -.2 -.3 -.3 -.3 -.3 -.3 -.3 -.3 -.3 -.5 -.5 -.5 -.4 -.4 -.4 -.3 -.3 -.4 -.4 -.4 -.3 -.2 -.2 -.2 -.2
-.4 -.4 -.4 -.4 -.4 -.5 -.4 -.4 -.3 -.3 -.3 -.3 -.4 -.4 -.4 -.4 -.4 -.4 -.3 -.3 -.5 -.5 -.4 -.4 -.4 -.4 -.4 -.3 -.4 -.4 -.4 -.4 -.3 -.3 -.3 -.4
-.5 -.4 -.5 -.5 -.5 -.5 -.5 -.5 -.4 -.4 -.3 -.4 -.4 -.4 -.4 -.5 -.5 -.4 -.4 -.6 -.7 -.5 -.5 -.5 -.4 -.4 -.4 -.3 -.4 -.4 -.5 -.4 -.3 -.4 -.4 -.5
-.5 -.4 -.5 -.4 -.4 -.4 -.4 -.4 -.4 -.4 -.3 -.3 -.4 -.4 -.4 -.4 -.4 -.5 -.5 -.6 -.6 -.6 -.5 -.5 -.4 -.4 -.4 -.4 -.5 -.4 -.5 -.5 -.4 -.4 -.4 -.5
-.4 -.4 -.4 -.4 -.3 -.4 -.4 -.4 -.4 -.4 -.4 -.4 -.5 -.4 -.4 -.3 -.3 -.3 -.3 -.3 -.3 -.3 -.4 -.4 -.3 -.4 -.4 -.4 -.5 -.5 -.5 -.5 -.5 -.5 -.4 -.4
-.2 -.2 -.2 -.2 -.2 -.3 -.2 -.2 -.2 -.3 -.3 -.4 -.3 -.3 -.3 -.3 -.2 -.1 -.2 -.2 -.1 -.2 -.2 -.2 -.3 -.3 -.3 -.4 -.4 -.4 -.4 -.4 -.3 -.3 -.3 -.2
.0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 -.1 -.1 -.1 -.1 -.1 .0 .0 .0 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 -.1 .0 .0
.0 .0 .0 .0 .0 .0 .0 .1 .1 .1 .1 .0 .0 .0 -.1 .0 .0 .1 .0 .0 .0 -.1 -.1 -.1 -.1 .0 .0 .0 .0 .0 .0 -.1 -.1 .0 -.1 .0
-.2 -.2 -.2 -.2 -.2 -.2 -.2 -.2 -.1 -.1 -.1 -.2 -.3 -.3 -.3 -.3 -.2 -.2 -.2 -.2 -.2 -.3 -.3 -.3 -.2 -.2 -.1 -.2 -.1 -.2 -.2 -.3 -.3 -.3 -.3 -.2
-.5 -.5 -.5 -.5 -.5 -.5 -.5 -.5 -.5 -.5 -.5 -.5 -.6 -.6 -.6 -.6 -.6 -.5 -.5 -.5 -.6 -.6 -.7 -.6 -.6 -.6 -.6 -.5 -.5 -.6 -.6 -.6 -.6 -.6 -.5 -.5
-.7 -.7 -.7 -.7 -.7 -.7 -.7 -.7 -.7 -.7 -.7 -.7 -.7 -.7 -.8 -.8 -.8 -.8 -.7 -.7 -.8 -.8 -.8 -.8 -.8 -.8 -.8 -.8 -.8 -.8 -.8 -.8 -.8 -.8 -.7 -.7
-.5 -.5 -.5 -.5 -.5 -.5 -.5 -.5 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.6 -.7 -.7 -.7 -.7 -.7 -.7 -.7 -.7 -.6 -.6 -.6

Figure 54. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-9 (100 hPa)
NOAA16, using all observations



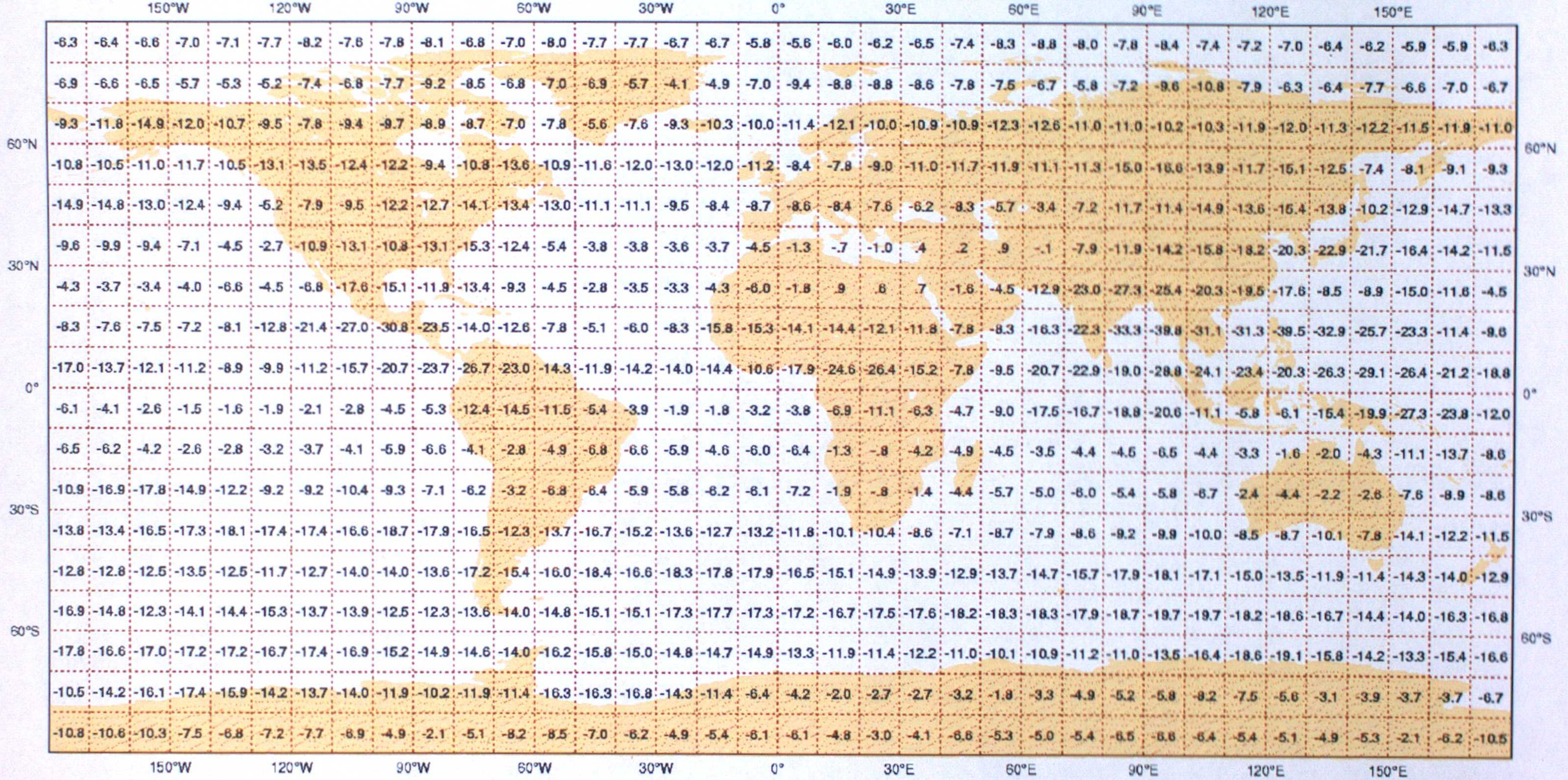
.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
.3	.2	.2	.3	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.2	.2	.2	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4
.3	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.4	.3	.3	.3	.3	.3	.4	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.3	.3
.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.3	.4	.3	.4	.4	.4	.4
.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2

Figure 55. ATOVS mean daily count. JULY 2006
NOAA18, using all observations
Global average number of observations in 24 hours = 605821



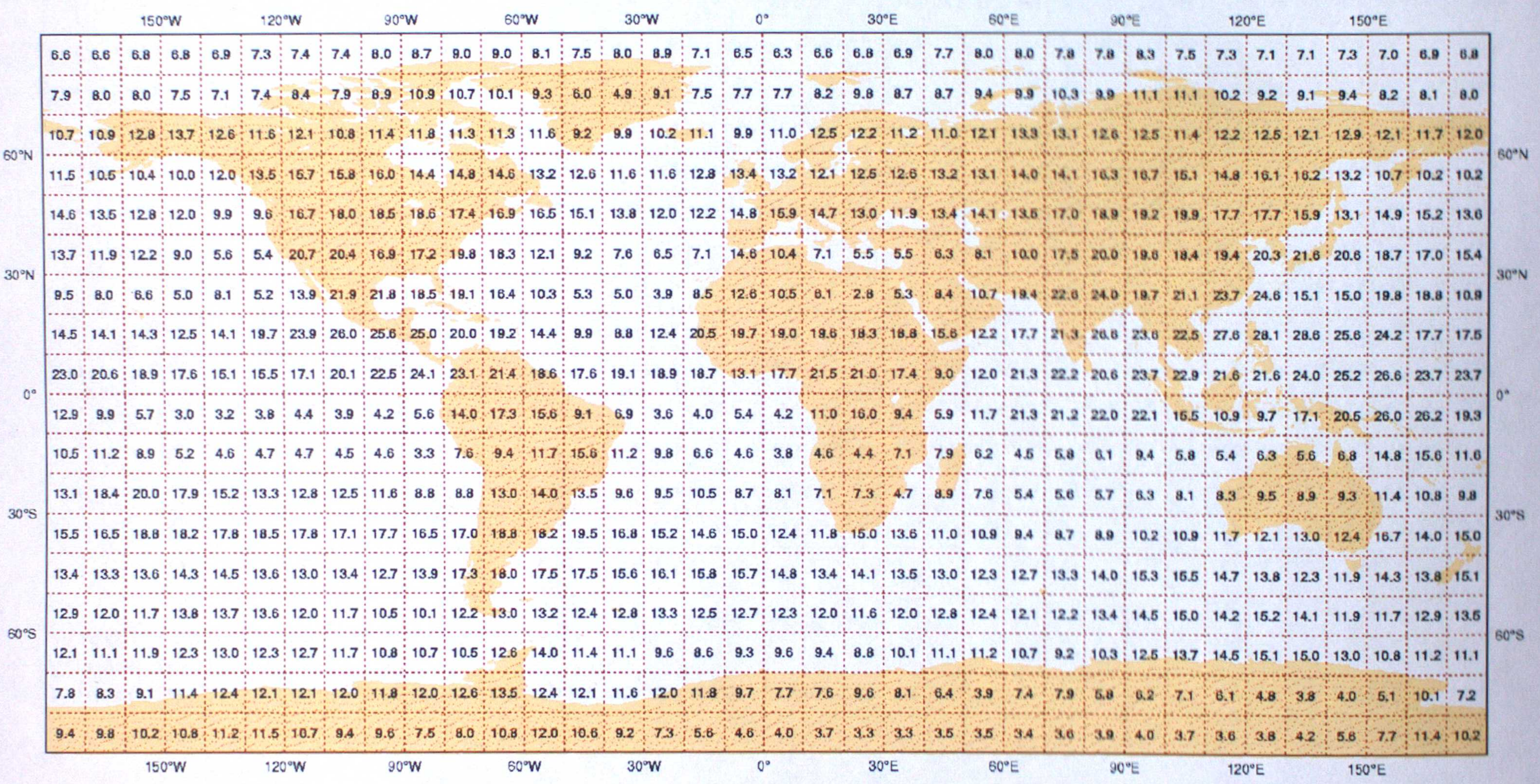
415	424	432	443	449	450	446	448	451	457	460	467	468	434	452	458	458	451	445	435	426	419	412	403	400	391	390	388	385	385	386	390	391	397	403	408
1169	1206	1243	1254	1256	1267	1263	1274	1291	1300	1304	1310	1292	1206	1227	1357	1341	1303	1236	1177	1137	1122	1123	1147	1171	1180	1180	1165	1143	1112	1080	1061	1048	1059	1075	1125
949	1071	1163	1177	1161	1135	1114	1121	1138	1148	1157	1173	1164	1139	1176	1208	1169	1108	1006	919	889	948	1039	1127	1180	1188	1176	1145	1127	1112	1069	1002	912	849	822	856
772	974	1116	1149	1131	1074	1027	1033	1068	1089	1112	1136	1126	1114	1104	1124	1063	958	847	769	822	969	1085	1123	1131	1101	1064	1042	1059	1093	1098	1052	923	789	699	677
793	949	1071	1102	1116	1077	998	988	1031	1049	1067	1096	1092	1085	1079	1091	1012	902	797	727	865	1063	1106	1103	1101	1073	1047	1046	1047	1067	1089	1104	996	769	679	721
1061	1091	1070	1100	1073	1073	1004	957	1030	1015	1053	1096	1075	1105	1059	1061	997	875	762	706	933	1077	1071	1118	1084	1033	1040	1036	1044	1069	1072	1113	1037	757	638	849
1078	1084	1090	1139	1092	1114	1077	995	1048	1007	1036	1105	1052	1109	1051	1028	974	853	699	719	922	1066	1034	1106	1095	1008	1045	1018	1039	1095	1048	1117	1049	793	569	791
1057	1085	1073	1128	1081	1095	1062	1013	1037	1043	1027	1060	1049	1113	1076	1006	929	835	649	804	1031	1108	1082	1108	1078	983	1052	1004	1053	1107	1050	1118	1059	870	571	728
1018	1073	1090	1117	1092	1096	1050	1015	1042	1063	1041	1086	1063	1060	1059	973	917	802	638	885	1062	1106	1104	1107	1061	982	1046	1007	1044	1092	1072	1104	1060	939	608	691
962	1079	1091	1047	1077	1068	1032	1006	991	1079	1077	1084	1092	1015	1051	986	909	752	651	949	1037	1072	1088	1070	1046	1008	1027	1020	1067	1064	1093	1082	1055	972	653	654
881	1064	1100	1060	1114	1082	1059	1045	949	1028	1068	1058	1095	1013	1034	908	819	680	640	987	1088	1078	1118	1067	1009	1016	991	1023	1067	1063	1099	1016	1035	1025	785	647
770	1032	1100	1085	1132	1091	1038	1053	999	1022	1028	1059	1105	1018	1036	977	785	632	686	967	1075	1052	1102	1060	996	989	883	974	1040	1012	1022	996	1003	1026	786	634
733	982	1099	1047	1089	1076	1015	1055	1021	1057	1064	1083	1101	1044	1025	961	736	651	838	1033	1112	1097	1106	1092	1040	1003	981	1055	1077	1056	1078	1031	1022	1024	930	718
738	900	1035	1094	1119	1096	1074	1079	1033	1020	1041	1098	1108	1090	1029	895	701	691	904	1065	1101	1115	1116	1094	1073	1037	1047	1081	1095	1095	1089	1052	1064	1080	1007	813
809	864	1002	1101	1136	1108	1082	1073	1030	990	1046	1103	1121	1075	969	822	716	799	996	1093	1124	1136	1129	1108	1075	1073	1089	1118	1138	1128	1107	1087	1113	1130	1080	932
956	951	987	1053	1130	1183	1209	1210	1170	1162	1161	1070	1120	1056	956	874	891	975	1084	1159	1144	1127	1092	1027	1059	1095	1124	1080	1109	1067	1099	1072	1048	1002	1011	985
1038	1019	994	974	951	880	913	964	884	863	762	750	957	979	1001	943	799	599	529	472	458	545	358	316	790	922	704	244	298	423	616	983	1141	1038	794	926
234	255	245	248	293	324	299	216	177	257	300	263	222	259	293	284	242	160	107	105	147	147	61	36	30	33	40	55	111	208	275	343	315	293	261	239

Figure 56. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS8 (Surface)
NOAA18, using all observations



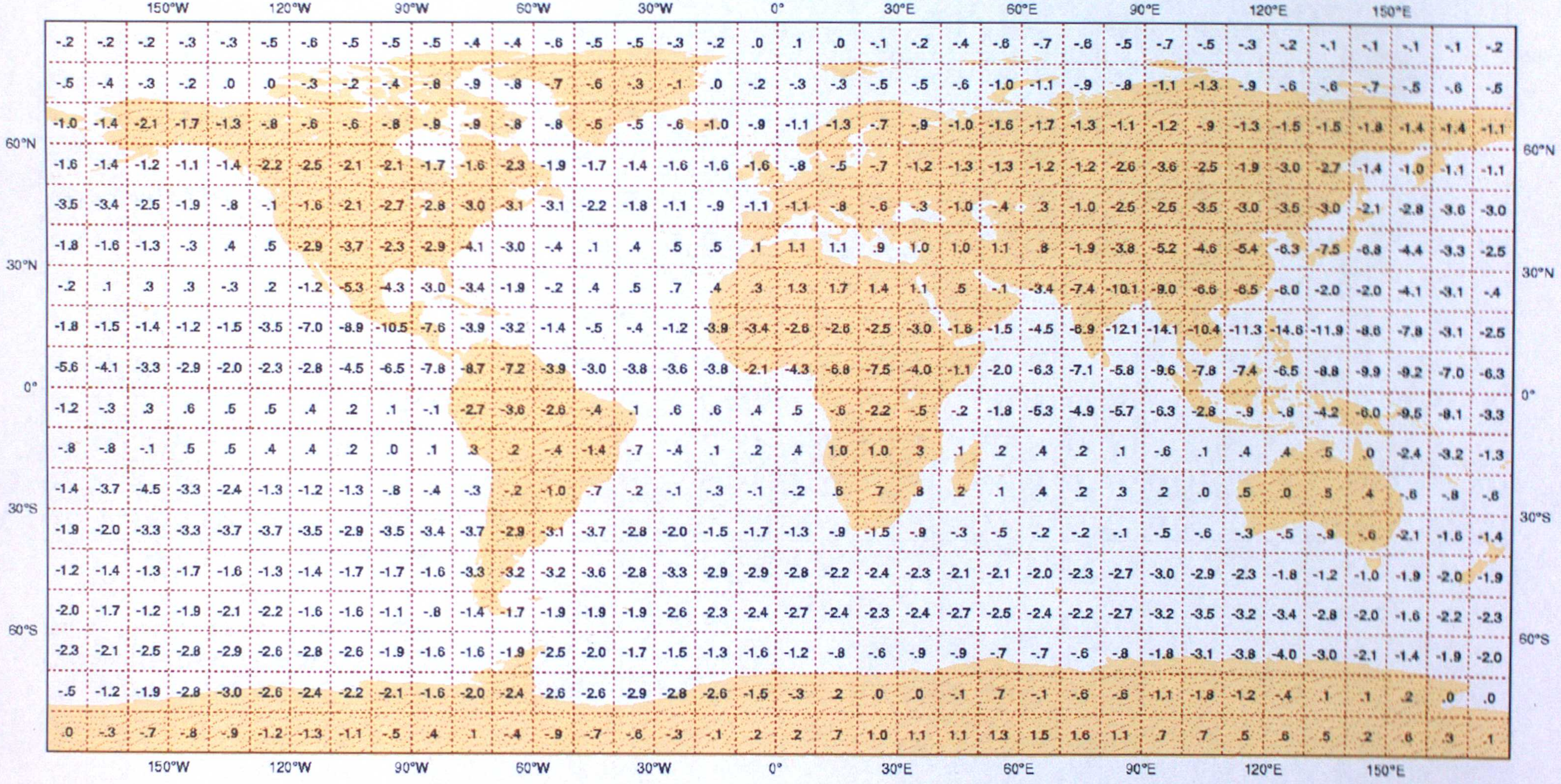
-6.3	-6.4	-6.6	-7.0	-7.1	-7.7	-8.2	-7.6	-7.8	-8.1	-6.8	-7.0	-8.0	-7.7	-7.7	-6.7	-6.7	-5.8	-5.6	-6.0	-6.2	-6.5	-7.4	-8.3	-8.8	-8.0	-7.8	-8.4	-7.4	-7.2	-7.0	-6.4	-6.2	-5.9	-5.9	-6.3
-6.9	-6.6	-6.5	-5.7	-5.3	-5.2	-7.4	-6.8	-7.7	-9.2	-8.5	-6.8	-7.0	-6.9	-5.7	-4.1	-4.9	-7.0	-9.4	-8.8	-8.8	-8.6	-7.8	-7.5	-6.7	-5.8	-7.2	-9.6	-10.8	-7.9	-6.3	-6.4	-7.7	-6.6	-7.0	-6.7
-9.3	-11.8	-14.9	-12.0	-10.7	-9.5	-7.8	-9.4	-9.7	-8.9	-8.7	-7.0	-7.8	-5.6	-7.6	-9.3	-10.3	-10.0	-11.4	-12.1	-10.0	-10.9	-10.9	-12.3	-12.6	-11.0	-11.0	-10.2	-10.3	-11.9	-12.0	-11.3	-12.2	-11.5	-11.9	-11.0
-10.8	-10.5	-11.0	-11.7	-10.5	-13.1	-13.5	-12.4	-12.2	-9.4	-10.8	-13.6	-10.9	-11.6	-12.0	-13.0	-12.0	-11.2	-8.4	-7.8	-9.0	-11.0	-11.7	-11.9	-11.1	-11.3	-15.0	-16.6	-13.9	-11.7	-15.1	-12.5	-7.4	-8.1	-9.1	-9.3
-14.9	-14.8	-13.0	-12.4	-9.4	-6.2	-7.9	-9.5	-12.2	-12.7	-14.1	-13.4	-13.0	-11.1	-11.1	-9.5	-8.4	-8.7	-8.6	-8.4	-7.6	-6.2	-8.3	-5.7	-3.4	-7.2	-11.7	-11.4	-14.9	-13.6	-15.4	-13.8	-10.2	-12.9	-14.7	-13.3
-9.6	-9.9	-9.4	-7.1	-4.5	-2.7	-10.9	-13.1	-10.8	-13.1	-15.3	-12.4	-5.4	-3.8	-3.8	-3.6	-3.7	-4.5	-1.3	-.7	-1.0	.4	.2	.9	-.1	-7.9	-11.9	-14.2	-15.8	-18.2	-20.3	-22.9	-21.7	-16.4	-14.2	-11.5
-4.3	-3.7	-3.4	-4.0	-6.6	-4.5	-6.8	-17.6	-15.1	-11.9	-13.4	-9.3	-4.5	-2.8	-3.5	-3.3	-4.3	-6.0	-1.8	.9	.6	.7	-1.6	-4.5	-12.9	-23.0	-27.3	-25.4	-20.3	-19.5	-17.6	-8.5	-8.9	-15.0	-11.6	-4.5
-8.3	-7.6	-7.5	-7.2	-8.1	-12.8	-21.4	-27.0	-30.8	-23.5	-14.0	-12.6	-7.8	-5.1	-6.0	-8.3	-15.8	-15.3	-14.1	-14.4	-12.1	-11.8	-7.8	-8.3	-16.3	-22.3	-33.3	-39.8	-31.1	-31.3	-39.5	-32.9	-25.7	-23.3	-11.4	-9.6
-17.0	-13.7	-12.1	-11.2	-8.9	-9.9	-11.2	-15.7	-20.7	-23.7	-26.7	-23.0	-14.3	-11.9	-14.2	-14.0	-14.4	-10.6	-17.9	-24.6	-26.4	-15.2	-7.8	-9.5	-20.7	-22.9	-19.0	-28.8	-24.1	-23.4	-20.3	-26.3	-29.1	-26.4	-21.2	-18.8
-6.1	-4.1	-2.6	-1.5	-1.6	-1.9	-2.1	-2.8	-4.5	-5.3	-12.4	-14.5	-11.5	-5.4	-3.9	-1.9	-1.8	-3.2	-3.8	-6.9	-11.1	-6.3	-4.7	-9.0	-17.5	-16.7	-18.8	-20.6	-11.1	-5.8	-6.1	-15.4	-19.9	-27.3	-23.8	-12.0
-6.5	-6.2	-4.2	-2.6	-2.8	-3.2	-3.7	-4.1	-5.9	-6.6	-4.1	-2.8	-4.9	-6.8	-6.6	-5.9	-4.6	-6.0	-6.4	-1.3	-.8	-4.2	-4.9	-4.5	-3.5	-4.4	-4.5	-6.5	-4.4	-3.3	-1.6	-2.0	-4.3	-11.1	-13.7	-8.6
-10.9	-16.9	-17.8	-14.9	-12.2	-9.2	-9.2	-10.4	-9.3	-7.1	-6.2	-3.2	-6.8	-6.4	-5.9	-5.8	-6.2	-6.1	-7.2	-1.9	-.8	-1.4	-4.4	-5.7	-5.0	-6.0	-5.4	-5.8	-6.7	-2.4	-4.4	-2.2	-2.6	-7.6	-8.9	-8.6
-13.8	-13.4	-16.5	-17.3	-18.1	-17.4	-17.4	-16.6	-18.7	-17.9	-16.5	-12.3	-13.7	-16.7	-15.2	-13.6	-12.7	-13.2	-11.8	-10.1	-10.4	-8.6	-7.1	-8.7	-7.9	-8.6	-9.2	-9.9	-10.0	-8.5	-8.7	-10.1	-7.8	-14.1	-12.2	-11.5
-12.8	-12.8	-12.5	-13.5	-12.5	-11.7	-12.7	-14.0	-14.0	-13.6	-17.2	-15.4	-16.0	-18.4	-16.6	-18.3	-17.8	-17.9	-16.5	-15.1	-14.9	-13.9	-12.9	-13.7	-14.7	-15.7	-17.9	-18.1	-17.1	-15.0	-13.5	-11.9	-11.4	-14.3	-14.0	-12.9
-16.9	-14.8	-12.3	-14.1	-14.4	-15.3	-13.7	-13.9	-12.5	-12.3	-13.6	-14.0	-14.8	-15.1	-15.1	-17.3	-17.7	-17.3	-17.2	-16.7	-17.5	-17.6	-18.2	-18.3	-18.3	-17.9	-18.7	-19.7	-19.7	-18.2	-18.6	-16.7	-14.4	-14.0	-16.3	-16.8
-17.8	-16.6	-17.0	-17.2	-17.2	-16.7	-17.4	-16.9	-15.2	-14.9	-14.6	-14.0	-16.2	-15.8	-15.0	-14.8	-14.7	-14.9	-13.3	-11.9	-11.4	-12.2	-11.0	-10.1	-10.9	-11.2	-11.0	-13.6	-16.4	-18.6	-19.1	-15.8	-14.2	-13.3	-15.4	-16.6
-10.5	-14.2	-16.1	-17.4	-15.9	-14.2	-13.7	-14.0	-11.9	-10.2	-11.9	-11.4	-16.3	-16.3	-16.8	-14.3	-11.4	-6.4	-4.2	-2.0	-2.7	-2.7	-3.2	-1.8	-3.3	-4.9	-5.2	-5.8	-8.2	-7.5	-5.6	-3.1	-3.9	-3.7	-3.7	-6.7
-10.8	-10.6	-10.3	-7.5	-6.8	-7.2	-7.7	-6.9	-4.9	-2.1	-5.1	-8.2	-8.5	-7.0	-6.2	-4.9	-5.4	-6.1	-6.1	-4.8	-3.0	-4.1	-6.6	-5.3	-5.0	-5.4	-6.5	-6.6	-6.4	-5.4	-5.1	-4.9	-5.3	-2.1	-6.2	-10.5

Figure 57. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS8 (Surface)
NOAA18, using all observations



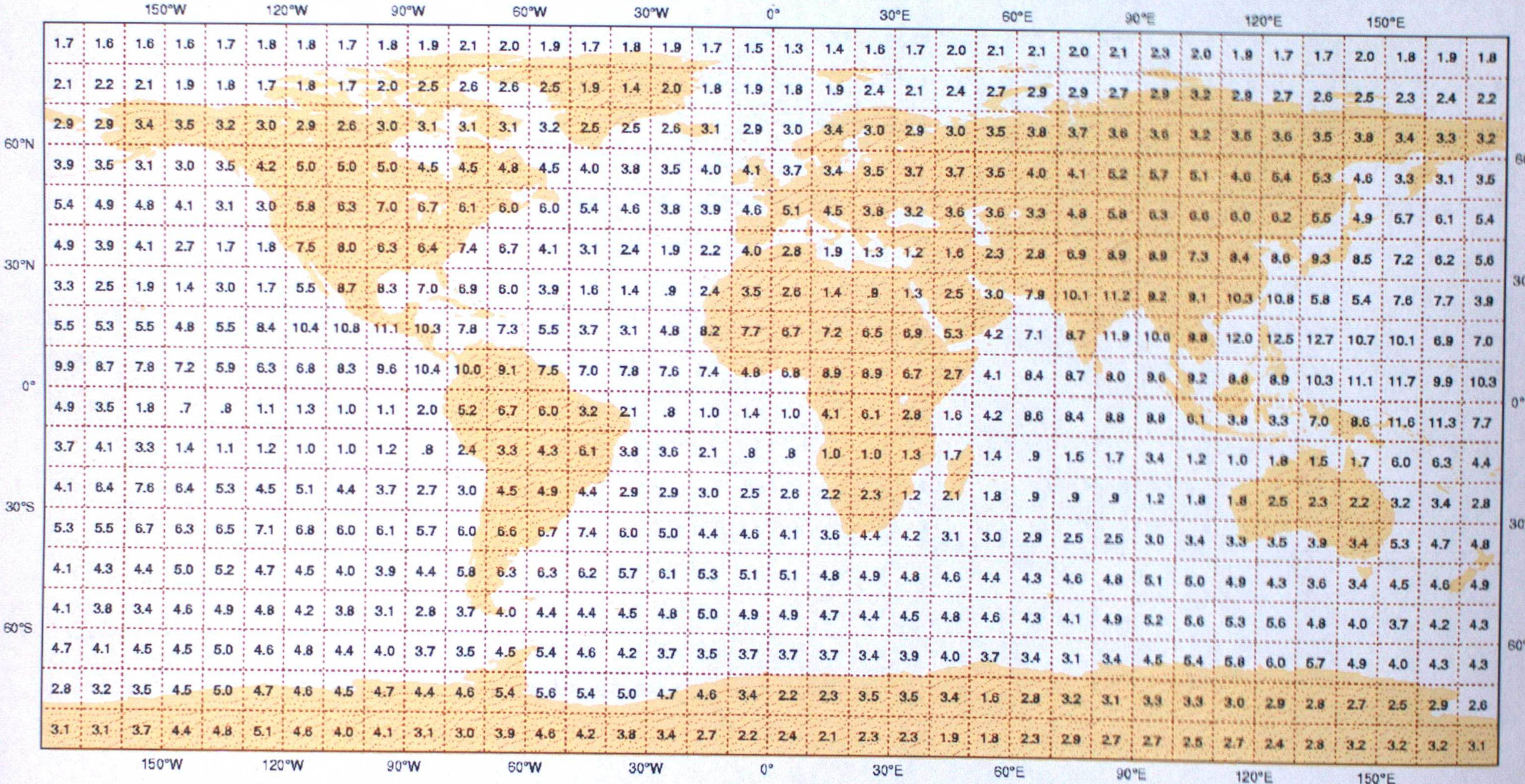
6.6	6.6	6.8	6.8	6.9	7.3	7.4	7.4	8.0	8.7	9.0	9.0	8.1	7.5	8.0	8.9	7.1	6.5	6.3	6.6	6.8	6.9	7.7	8.0	8.0	7.8	7.8	8.3	7.5	7.3	7.1	7.1	7.3	7.0	6.9	6.8
7.9	8.0	8.0	7.5	7.1	7.4	8.4	7.9	8.9	10.9	10.7	10.1	9.3	6.0	4.9	9.1	7.5	7.7	7.7	8.2	9.8	8.7	8.7	9.4	9.9	10.3	9.9	11.1	11.1	10.2	9.2	9.1	9.4	8.2	8.1	8.0
10.7	10.9	12.8	13.7	12.6	11.6	12.1	10.8	11.4	11.8	11.3	11.3	11.6	9.2	9.9	10.2	11.1	9.9	11.0	12.5	12.2	11.2	11.0	12.1	13.3	13.1	12.6	12.5	11.4	12.2	12.5	12.1	12.9	12.1	11.7	12.0
11.5	10.5	10.4	10.0	12.0	13.5	15.7	15.8	16.0	14.4	14.8	14.6	13.2	12.6	11.6	11.6	12.8	13.4	13.2	12.1	12.5	12.6	13.2	13.1	14.0	14.1	16.3	16.7	15.1	14.8	16.1	16.2	13.2	10.7	10.2	10.2
14.6	13.5	12.8	12.0	9.9	9.6	16.7	18.0	18.5	18.6	17.4	16.9	16.5	15.1	13.8	12.0	12.2	14.8	15.9	14.7	13.0	11.9	13.4	14.1	13.6	17.0	18.9	19.2	19.9	17.7	17.7	15.9	13.1	14.9	15.2	13.6
13.7	11.9	12.2	9.0	5.6	5.4	20.7	20.4	16.9	17.2	19.8	18.3	12.1	9.2	7.6	6.5	7.1	14.6	10.4	7.1	5.5	5.5	6.3	8.1	10.0	17.5	20.0	19.6	18.4	19.4	20.3	21.6	20.6	18.7	17.0	15.4
9.5	8.0	6.6	5.0	8.1	5.2	13.9	21.9	21.8	18.5	19.1	16.4	10.3	5.3	5.0	3.9	8.5	12.6	10.5	8.1	2.8	5.3	8.4	10.7	19.4	22.6	24.0	19.7	21.1	23.7	24.6	15.1	15.0	19.8	18.8	10.9
14.5	14.1	14.3	12.5	14.1	19.7	23.9	26.0	25.6	25.0	20.0	19.2	14.4	9.9	8.8	12.4	20.5	19.7	19.0	19.6	18.3	18.8	15.6	12.2	17.7	21.3	20.6	23.6	22.5	27.6	28.1	28.6	25.6	24.2	17.7	17.5
23.0	20.6	18.9	17.6	15.1	15.5	17.1	20.1	22.5	24.1	23.1	21.4	18.6	17.6	19.1	18.9	18.7	13.1	17.7	21.5	21.0	17.4	9.0	12.0	21.3	22.2	20.6	23.7	22.9	21.6	21.6	24.0	25.2	26.6	23.7	23.7
12.9	9.9	5.7	3.0	3.2	3.8	4.4	3.9	4.2	5.6	14.0	17.3	15.6	9.1	6.9	3.6	4.0	5.4	4.2	11.0	16.0	9.4	5.9	11.7	21.3	21.2	22.0	22.1	16.5	10.9	9.7	17.1	20.5	26.0	26.2	19.3
10.5	11.2	8.9	5.2	4.6	4.7	4.7	4.5	4.6	3.3	7.6	9.4	11.7	15.6	11.2	9.8	6.6	4.6	3.8	4.6	4.4	7.1	7.9	6.2	4.5	5.8	6.1	9.4	5.8	5.4	6.3	5.6	6.8	14.8	15.6	11.6
13.1	18.4	20.0	17.9	15.2	13.3	12.8	12.5	11.6	8.8	8.8	13.0	14.0	13.5	9.6	9.5	10.5	8.7	8.1	7.1	7.3	4.7	8.9	7.6	5.4	5.6	5.7	6.3	8.1	8.3	9.5	8.9	9.3	11.4	10.8	9.8
15.5	16.5	18.8	18.2	17.8	18.5	17.8	17.1	17.7	16.5	17.0	18.8	18.2	19.5	16.8	15.2	14.6	15.0	12.4	11.8	15.0	13.6	11.0	10.9	9.4	8.7	8.9	10.2	10.9	11.7	12.1	13.0	12.4	16.7	14.0	15.0
13.4	13.3	13.6	14.3	14.5	13.6	13.0	13.4	12.7	13.9	17.3	18.0	17.5	17.5	15.6	16.1	15.8	15.7	14.8	13.4	14.1	13.5	13.0	12.3	12.7	13.3	14.0	15.3	16.5	14.7	13.8	12.3	11.9	14.3	13.8	15.1
12.9	12.0	11.7	13.8	13.7	13.6	12.0	11.7	10.5	10.1	12.2	13.0	13.2	12.4	12.8	13.3	12.5	12.7	12.3	12.0	11.6	12.0	12.8	12.4	12.1	12.2	13.4	14.5	15.0	14.2	15.2	14.1	11.9	11.7	12.9	13.6
12.1	11.1	11.9	12.3	13.0	12.3	12.7	11.7	10.8	10.7	10.5	12.6	14.0	11.4	11.1	9.6	8.6	9.3	9.6	9.4	8.8	10.1	11.1	11.2	10.7	9.2	10.3	12.5	13.7	14.5	15.1	15.0	13.0	10.8	11.2	11.1
7.8	8.3	9.1	11.4	12.4	12.1	12.1	12.0	11.8	12.0	12.6	13.5	12.4	12.1	11.6	12.0	11.8	9.7	7.7	7.6	9.6	8.1	6.4	3.9	7.4	7.9	5.8	6.2	7.1	6.1	4.8	3.8	4.0	5.1	10.1	7.2
9.4	9.8	10.2	10.8	11.2	11.5	10.7	9.4	9.6	7.5	8.0	10.8	12.0	10.6	9.2	7.3	5.6	4.6	4.0	3.7	3.3	3.3	3.5	3.5	3.4	3.6	3.9	4.0	3.7	3.6	3.8	4.2	5.6	7.7	11.4	10.2

Figure 58. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS15 (700 hPa)
NOAA18, using all observations



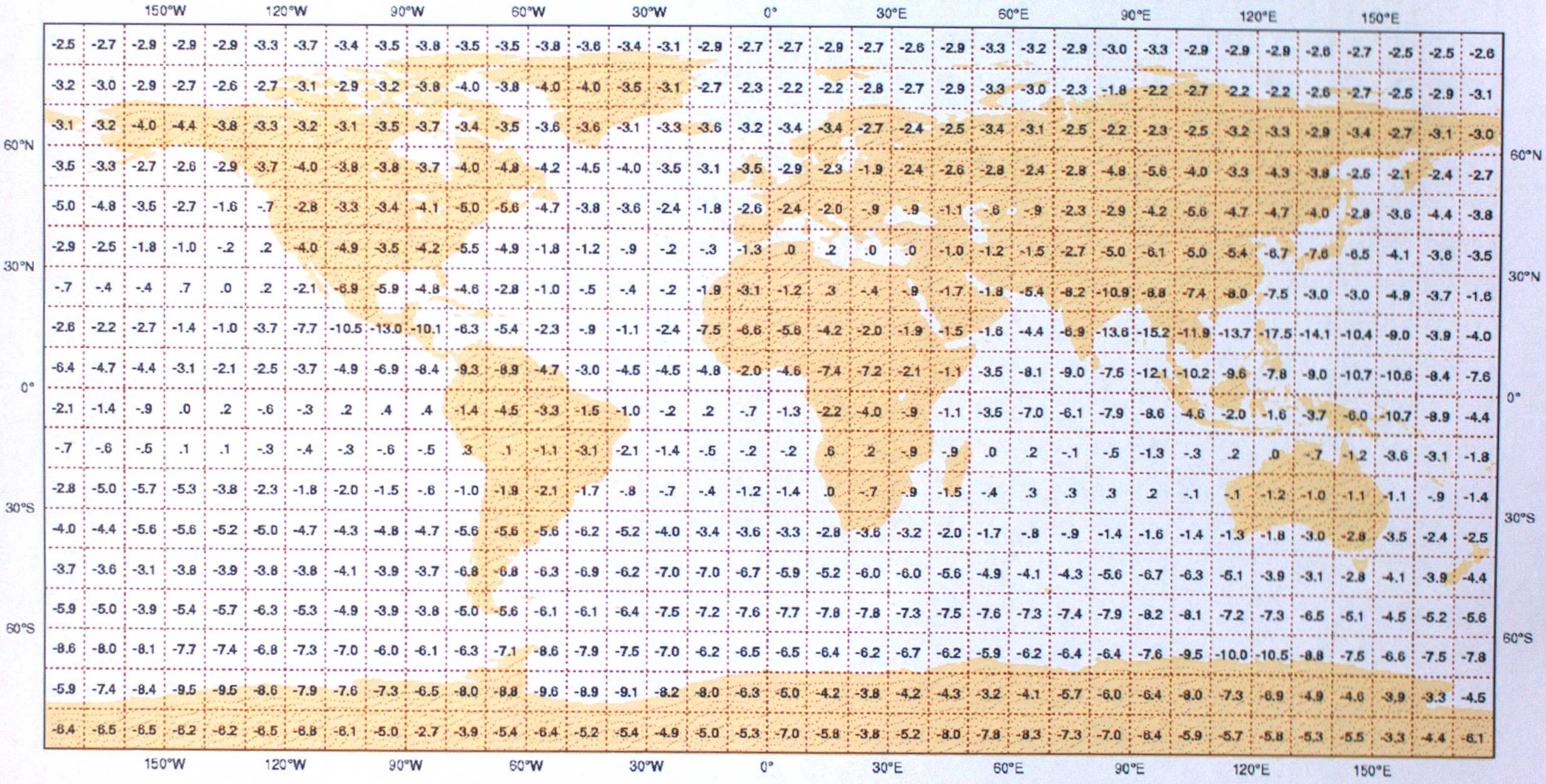
-.2	-.2	-.2	-.3	-.3	-.5	-.6	-.5	-.5	-.5	-.4	-.4	-.6	-.5	-.5	-.3	-.2	.0	.1	.0	-.1	-.2	-.4	-.6	-.7	-.6	-.5	-.7	-.5	-.3	-.2	-.1	-.1	-.1	-.1	-.2
-.5	-.4	-.3	-.2	.0	.0	-.3	-.2	-.4	-.8	-.9	-.8	-.7	-.6	-.3	-.1	.0	-.2	-.3	-.3	-.5	-.5	-.6	-1.0	-1.1	-.9	-.8	-1.1	-1.3	-.9	-.6	-.6	-.7	-.5	-.6	-.5
-1.0	-1.4	-2.1	-1.7	-1.3	-.8	-.6	-.6	-.8	-.9	-.9	-.8	-.8	-.5	-.5	-.6	-1.0	-.9	-1.1	-1.3	-.7	-.9	-1.0	-1.6	-1.7	-1.3	-1.1	-1.2	-.9	-1.3	-1.5	-1.5	-1.8	-1.4	-1.4	-1.1
-1.6	-1.4	-1.2	-1.1	-1.4	-2.2	-2.5	-2.1	-2.1	-1.7	-1.6	-2.3	-1.9	-1.7	-1.4	-1.6	-1.6	-1.6	-.8	-.5	-.7	-1.2	-1.3	-1.3	-1.2	-1.2	-2.6	-3.6	-2.5	-1.9	-3.0	-2.7	-1.4	-1.0	-1.1	-1.1
-3.5	-3.4	-2.5	-1.9	-.8	-.1	-1.6	-2.1	-2.7	-2.8	-3.0	-3.1	-3.1	-2.2	-1.8	-1.1	-.9	-1.1	-1.1	-.8	-.6	-.3	-1.0	-.4	.3	-1.0	-2.5	-2.5	-3.5	-3.0	-3.5	-3.0	-2.1	-2.8	-3.6	-3.0
-1.8	-1.6	-1.3	-.3	.4	.5	-2.9	-3.7	-2.3	-2.9	-4.1	-3.0	-.4	.1	.4	.5	.5	.1	1.1	1.1	.9	1.0	1.0	1.1	.8	-1.9	-3.8	-5.2	-4.6	-5.4	-6.3	-7.5	-6.8	-4.4	-3.3	-2.5
-.2	.1	.3	.3	-.3	.2	-1.2	-5.3	-4.3	-3.0	-3.4	-1.9	-.2	.4	.5	.7	.4	.3	1.3	1.7	1.4	1.1	.5	-.1	-3.4	-7.4	-10.1	-9.0	-6.6	-6.5	-6.0	-2.0	-2.0	-4.1	-3.1	-.4
-1.8	-1.5	-1.4	-1.2	-1.5	-3.5	-7.0	-8.9	-10.5	-7.6	-3.9	-3.2	-1.4	-.5	-.4	-1.2	-3.9	-3.4	-2.6	-2.6	-2.5	-3.0	-1.6	-1.5	-4.5	-6.9	-12.1	-14.1	-10.4	-11.3	-14.6	-11.9	-8.6	-7.8	-3.1	-2.5
-5.6	-4.1	-3.3	-2.9	-2.0	-2.3	-2.8	-4.5	-6.5	-7.8	-8.7	-7.2	-3.9	-3.0	-3.8	-3.6	-3.8	-2.1	-4.3	-6.8	-7.5	-4.0	-1.1	-2.0	-6.3	-7.1	-5.8	-9.6	-7.8	-7.4	-6.5	-8.8	-9.9	-9.2	-7.0	-6.3
-1.2	-.3	.3	.6	.5	.5	.4	.2	.1	-.1	-2.7	-3.6	-2.6	-.4	.1	.6	.6	.4	.5	-.6	-2.2	-.5	-.2	-1.8	-5.3	-4.9	-5.7	-6.3	-2.8	-.9	-.8	-4.2	-6.0	-9.5	-8.1	-3.3
-.8	-.8	-.1	.5	.5	.4	.4	.2	.0	.1	.3	.2	-.4	-1.4	-.7	-.4	.1	.2	.4	1.0	1.0	.3	.1	.2	.4	.2	.1	-.6	.1	.4	.4	.5	.0	-2.4	-3.2	-1.3
-1.4	-3.7	-4.5	-3.3	-2.4	-1.3	-1.2	-1.3	-.8	-.4	-.3	-.2	-1.0	-.7	-.2	-.1	-.3	-.1	-.2	.6	.7	.8	.2	.1	.4	.2	.3	.2	.0	.5	.0	.5	.4	-.6	-.8	-.6
-1.9	-2.0	-3.3	-3.3	-3.7	-3.7	-3.5	-2.9	-3.5	-3.4	-3.7	-2.9	-3.1	-3.7	-2.8	-2.0	-1.5	-1.7	-1.3	-.9	-1.5	-.9	-.3	-.5	-.2	-.2	-.1	-.5	-.6	-.3	-.5	-.9	-.6	-2.1	-1.6	-1.4
-1.2	-1.4	-1.3	-1.7	-1.6	-1.3	-1.4	-1.7	-1.7	-1.6	-3.3	-3.2	-3.2	-3.6	-2.8	-3.3	-2.9	-2.9	-2.8	-2.2	-2.4	-2.3	-2.1	-2.1	-2.0	-2.3	-2.7	-3.0	-2.9	-2.3	-1.8	-1.2	-1.0	-1.9	-2.0	-1.9
-2.0	-1.7	-1.2	-1.9	-2.1	-2.2	-1.6	-1.6	-1.1	-.8	-1.4	-1.7	-1.9	-1.9	-1.9	-2.6	-2.3	-2.4	-2.7	-2.4	-2.3	-2.4	-2.7	-2.5	-2.4	-2.2	-2.7	-3.2	-3.5	-3.2	-3.4	-2.8	-2.0	-1.6	-2.2	-2.3
-2.3	-2.1	-2.5	-2.8	-2.9	-2.6	-2.8	-2.6	-1.9	-1.6	-1.6	-1.9	-2.5	-2.0	-1.7	-1.5	-1.3	-1.6	-1.2	-.8	-.6	-.9	-.9	-.7	-.7	-.6	-.8	-1.8	-3.1	-3.8	-4.0	-3.0	-2.1	-1.4	-1.9	-2.0
-.5	-1.2	-1.9	-2.8	-3.0	-2.6	-2.4	-2.2	-2.1	-1.6	-2.0	-2.4	-2.6	-2.6	-2.9	-2.8	-2.6	-1.5	-.3	.2	.0	.0	-.1	.7	-.1	-.6	-.6	-1.1	-1.8	-1.2	-.4	.1	.1	.2	.0	.0
.0	-.3	-.7	-.8	-.9	-1.2	-1.3	-1.1	-.5	.4	.1	-.4	-.9	-.7	-.6	-.3	-.1	.2	.2	.7	1.0	1.1	1.1	1.3	1.5	1.6	1.1	.7	.7	.5	.6	.5	.2	.6	.3	.1

Figure 59. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS15 (700 hPa)
NOAA18, using all observations



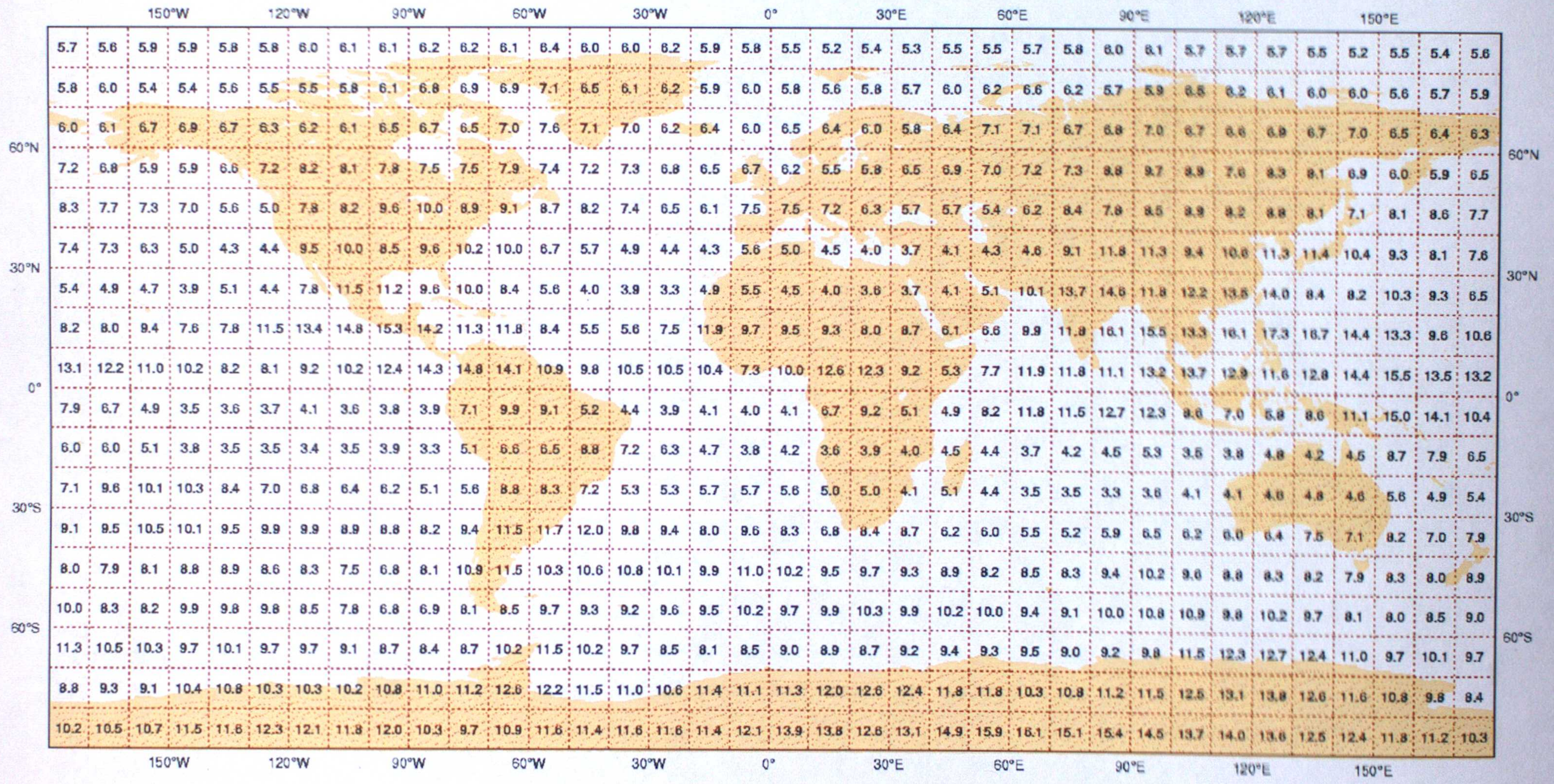
1.7	1.6	1.6	1.6	1.7	1.8	1.8	1.7	1.8	1.9	2.1	2.0	1.9	1.7	1.8	1.9	1.7	1.5	1.3	1.4	1.6	1.7	2.0	2.1	2.1	2.0	2.1	2.3	2.0	1.9	1.7	1.7	2.0	1.8	1.9	1.8
2.1	2.2	2.1	1.9	1.8	1.7	1.8	1.7	2.0	2.5	2.6	2.6	2.5	1.9	1.4	2.0	1.8	1.9	1.8	1.9	2.4	2.1	2.4	2.7	2.9	2.9	2.7	2.9	3.2	2.9	2.7	2.6	2.5	2.3	2.4	2.2
2.9	2.9	3.4	3.5	3.2	3.0	2.9	2.6	3.0	3.1	3.1	3.1	3.2	2.5	2.5	2.6	3.1	2.9	3.0	3.4	3.0	2.9	3.0	3.5	3.8	3.7	3.6	3.6	3.2	3.5	3.6	3.5	3.8	3.4	3.3	3.2
3.9	3.5	3.1	3.0	3.5	4.2	5.0	5.0	5.0	4.5	4.5	4.8	4.5	4.0	3.8	3.5	4.0	4.1	3.7	3.4	3.5	3.7	3.7	3.5	4.0	4.1	5.2	5.7	5.1	4.6	5.4	5.3	4.6	3.3	3.1	3.5
5.4	4.9	4.8	4.1	3.1	3.0	5.8	6.3	7.0	6.7	6.1	6.0	6.0	5.4	4.6	3.8	3.9	4.6	5.1	4.5	3.8	3.2	3.6	3.6	3.3	4.8	5.8	6.3	6.6	6.0	6.2	5.5	4.9	5.7	6.1	5.4
4.9	3.9	4.1	2.7	1.7	1.8	7.5	8.0	6.3	6.4	7.4	6.7	4.1	3.1	2.4	1.9	2.2	4.0	2.8	1.9	1.3	1.2	1.6	2.3	2.8	6.9	8.9	8.9	7.3	8.4	8.6	9.3	8.5	7.2	6.2	5.6
3.3	2.5	1.9	1.4	3.0	1.7	5.5	8.7	8.3	7.0	6.9	6.0	3.9	1.6	1.4	.9	2.4	3.5	2.6	1.4	.9	1.3	2.5	3.0	7.9	10.1	11.2	9.2	9.1	10.3	10.8	5.8	5.4	7.6	7.7	3.9
5.5	5.3	5.5	4.8	5.5	8.4	10.4	10.8	11.1	10.3	7.8	7.3	5.5	3.7	3.1	4.8	8.2	7.7	6.7	7.2	6.5	6.9	5.3	4.2	7.1	8.7	11.9	10.6	9.8	12.0	12.5	12.7	10.7	10.1	6.9	7.0
9.9	8.7	7.8	7.2	5.9	6.3	6.8	8.3	9.6	10.4	10.0	9.1	7.5	7.0	7.8	7.6	7.4	4.8	6.8	8.9	8.9	6.7	2.7	4.1	8.4	8.7	8.0	9.6	9.2	8.8	8.9	10.3	11.1	11.7	9.9	10.3
4.9	3.5	1.8	.7	.8	1.1	1.3	1.0	1.1	2.0	5.2	6.7	6.0	3.2	2.1	.8	1.0	1.4	1.0	4.1	6.1	2.8	1.6	4.2	8.6	8.4	8.8	8.8	6.1	3.8	3.3	7.0	8.6	11.6	11.3	7.7
3.7	4.1	3.3	1.4	1.1	1.2	1.0	1.0	1.2	.8	2.4	3.3	4.3	6.1	3.8	3.6	2.1	.8	.8	1.0	1.0	1.3	1.7	1.4	.9	1.5	1.7	3.4	1.2	1.0	1.8	1.5	1.7	6.0	6.3	4.4
4.1	6.4	7.6	6.4	5.3	4.5	5.1	4.4	3.7	2.7	3.0	4.5	4.9	4.4	2.9	2.9	3.0	2.5	2.6	2.2	2.3	1.2	2.1	1.8	.9	.9	.9	1.2	1.8	1.8	2.5	2.3	2.2	3.2	3.4	2.8
5.3	5.5	6.7	6.3	6.5	7.1	6.8	6.0	6.1	5.7	6.0	6.6	6.7	7.4	6.0	5.0	4.4	4.6	4.1	3.6	4.4	4.2	3.1	3.0	2.9	2.5	2.5	3.0	3.4	3.3	3.5	3.9	3.4	5.3	4.7	4.8
4.1	4.3	4.4	5.0	5.2	4.7	4.5	4.0	3.9	4.4	5.8	6.3	6.3	6.2	5.7	6.1	5.3	5.1	5.1	4.8	4.9	4.8	4.6	4.4	4.3	4.6	4.8	5.1	5.0	4.9	4.3	3.6	3.4	4.5	4.6	4.9
4.1	3.8	3.4	4.6	4.9	4.8	4.2	3.8	3.1	2.8	3.7	4.0	4.4	4.4	4.5	4.8	5.0	4.9	4.9	4.7	4.4	4.5	4.8	4.6	4.3	4.1	4.9	5.2	5.6	5.3	5.6	4.8	4.0	3.7	4.2	4.3
4.7	4.1	4.5	4.5	5.0	4.6	4.8	4.4	4.0	3.7	3.5	4.5	5.4	4.6	4.2	3.7	3.5	3.7	3.7	3.7	3.4	3.9	4.0	3.7	3.4	3.1	3.4	4.5	5.4	5.8	6.0	5.7	4.9	4.0	4.3	4.3
2.8	3.2	3.5	4.5	5.0	4.7	4.6	4.5	4.7	4.4	4.6	5.4	5.6	5.4	5.0	4.7	4.6	3.4	2.2	2.3	3.5	3.5	3.4	1.6	2.8	3.2	3.1	3.3	3.3	3.0	2.9	2.8	2.7	2.5	2.9	2.6
3.1	3.1	3.7	4.4	4.8	5.1	4.6	4.0	4.1	3.1	3.0	3.9	4.6	4.2	3.8	3.4	2.7	2.2	2.4	2.1	2.3	2.3	1.9	1.8	2.3	2.9	2.7	2.7	2.5	2.7	2.4	2.8	3.2	3.2	3.2	3.1

Figure 60. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS11 (500 - 700 hPa)
NOAA18, using all observations



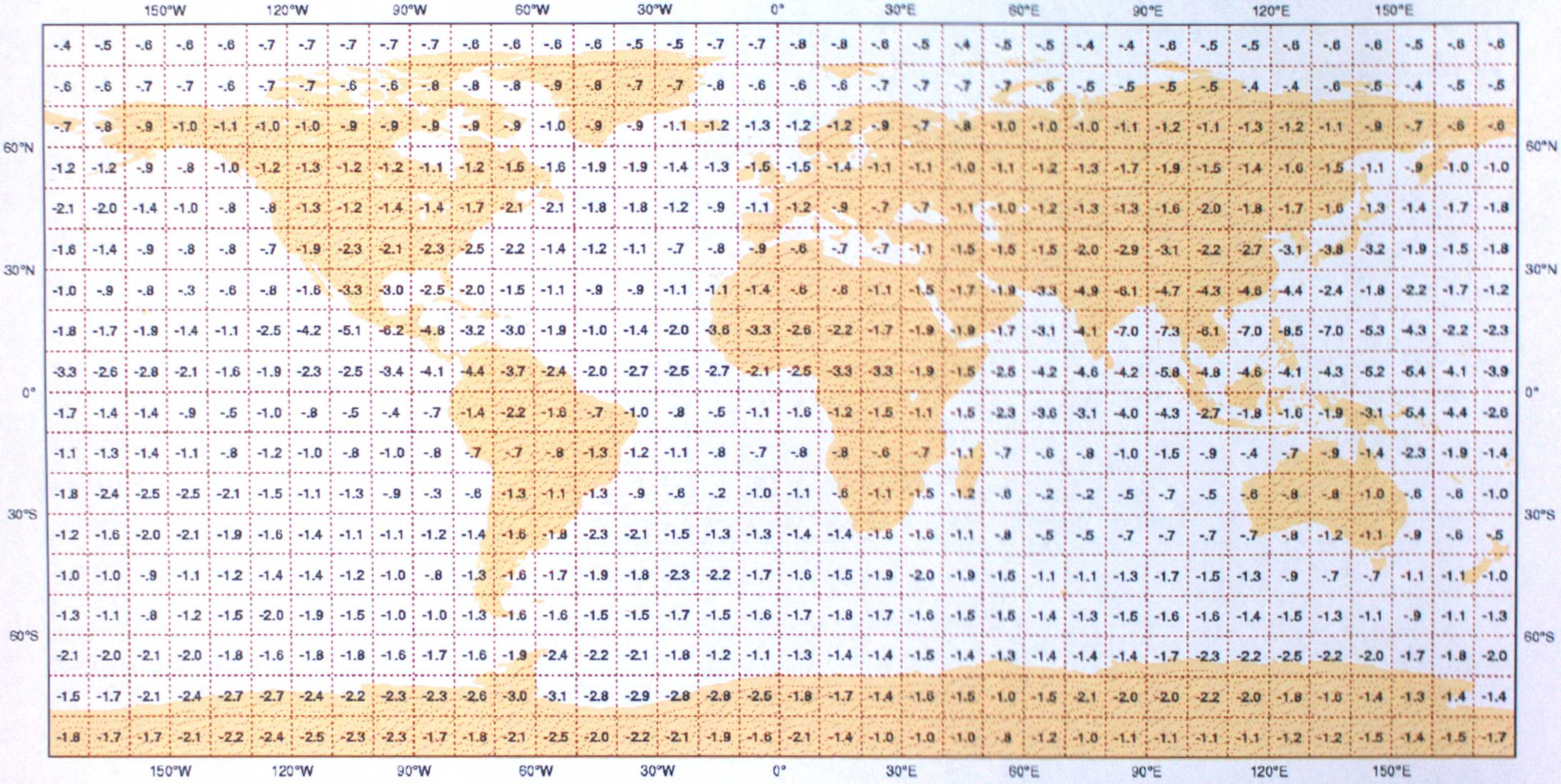
-2.5	-2.7	-2.9	-2.9	-2.9	-3.3	-3.7	-3.4	-3.5	-3.8	-3.5	-3.5	-3.8	-3.6	-3.4	-3.1	-2.9	-2.7	-2.7	-2.9	-2.7	-2.6	-2.9	-3.3	-3.2	-2.9	-3.0	-3.3	-2.9	-2.9	-2.9	-2.6	-2.7	-2.5	-2.5	-2.6
-3.2	-3.0	-2.9	-2.7	-2.6	-2.7	-3.1	-2.9	-3.2	-3.8	-4.0	-3.8	-4.0	-4.0	-3.5	-3.1	-2.7	-2.3	-2.2	-2.2	-2.8	-2.7	-2.9	-3.3	-3.0	-2.3	-1.8	-2.2	-2.7	-2.2	-2.2	-2.6	-2.7	-2.5	-2.9	-3.1
-3.1	-3.2	-4.0	-4.4	-3.8	-3.3	-3.2	-3.1	-3.5	-3.7	-3.4	-3.5	-3.6	-3.6	-3.1	-3.3	-3.6	-3.2	-3.4	-3.4	-2.7	-2.4	-2.5	-3.4	-3.1	-2.5	-2.2	-2.3	-2.5	-3.2	-3.3	-2.9	-3.4	-2.7	-3.1	-3.0
-3.5	-3.3	-2.7	-2.6	-2.9	-3.7	-4.0	-3.8	-3.8	-3.7	-4.0	-4.8	-4.2	-4.5	-4.0	-3.5	-3.1	-3.5	-2.9	-2.3	-1.9	-2.4	-2.6	-2.8	-2.4	-2.8	-4.8	-5.6	-4.0	-3.3	-4.3	-3.8	-2.5	-2.1	-2.4	-2.7
-5.0	-4.8	-3.5	-2.7	-1.6	-.7	-2.8	-3.3	-3.4	-4.1	-5.0	-5.6	-4.7	-3.8	-3.6	-2.4	-1.8	-2.6	-2.4	-2.0	-.9	-.9	-1.1	-.6	-.9	-2.3	-2.9	-4.2	-5.6	-4.7	-4.7	-4.0	-2.8	-3.6	-4.4	-3.8
-2.9	-2.5	-1.8	-1.0	-.2	.2	-4.0	-4.9	-3.5	-4.2	-5.5	-4.9	-1.8	-1.2	-.9	-.2	-.3	-1.3	.0	.2	.0	.0	-1.0	-1.2	-1.5	-2.7	-5.0	-6.1	-5.0	-5.4	-6.7	-7.6	-6.5	-4.1	-3.6	-3.5
-.7	-.4	-.4	.7	.0	.2	-2.1	-6.9	-5.9	-4.8	-4.6	-2.8	-1.0	-.5	-.4	-.2	-1.9	-3.1	-1.2	.3	-.4	-.9	-1.7	-1.8	-5.4	-8.2	-10.9	-8.8	-7.4	-8.0	-7.5	-3.0	-3.0	-4.9	-3.7	-1.6
-2.6	-2.2	-2.7	-1.4	-1.0	-3.7	-7.7	-10.5	-13.0	-10.1	-6.3	-5.4	-2.3	-.9	-1.1	-2.4	-7.5	-6.6	-5.6	-4.2	-2.0	-1.9	-1.5	-1.6	-4.4	-6.9	-13.6	-15.2	-11.9	-13.7	-17.5	-14.1	-10.4	-9.0	-3.9	-4.0
-6.4	-4.7	-4.4	-3.1	-2.1	-2.5	-3.7	-4.9	-6.9	-8.4	-9.3	-8.9	-4.7	-3.0	-4.5	-4.5	-4.8	-2.0	-4.6	-7.4	-7.2	-2.1	-1.1	-3.5	-8.1	-9.0	-7.5	-12.1	-10.2	-9.6	-7.8	-9.0	-10.7	-10.6	-8.4	-7.6
-2.1	-1.4	-.9	.0	.2	-.6	-.3	.2	.4	.4	-1.4	-4.5	-3.3	-1.5	-1.0	-.2	.2	-.7	-1.3	-2.2	-4.0	-.9	-1.1	-3.5	-7.0	-6.1	-7.9	-8.6	-4.6	-2.0	-1.6	-3.7	-6.0	-10.7	-8.9	-4.4
-.7	-.6	-.5	.1	.1	-.3	-.4	-.3	-.6	-.5	.3	.1	-1.1	-3.1	-2.1	-1.4	-.5	-.2	-.2	.6	.2	-.9	-.9	.0	.2	-.1	-.5	-1.3	-.3	.2	.0	-.7	-1.2	-3.6	-3.1	-1.8
-2.8	-5.0	-5.7	-5.3	-3.8	-2.3	-1.8	-2.0	-1.5	-.6	-1.0	-1.9	-2.1	-1.7	-.8	-.7	-.4	-1.2	-1.4	.0	-.7	-.9	-1.5	-.4	.3	.3	.3	.2	-.1	-.1	-1.2	-1.0	-1.1	-1.1	-.9	-1.4
-4.0	-4.4	-5.6	-5.6	-5.2	-5.0	-4.7	-4.3	-4.8	-4.7	-5.6	-5.6	-5.6	-6.2	-5.2	-4.0	-3.4	-3.6	-3.3	-2.8	-3.6	-3.2	-2.0	-1.7	-.8	-.9	-1.4	-1.6	-1.4	-1.3	-1.8	-3.0	-2.8	-3.5	-2.4	-2.5
-3.7	-3.6	-3.1	-3.8	-3.9	-3.8	-3.8	-4.1	-3.9	-3.7	-6.8	-6.8	-6.3	-6.9	-6.2	-7.0	-7.0	-6.7	-5.9	-5.2	-6.0	-6.0	-5.6	-4.9	-4.1	-4.3	-5.6	-6.7	-6.3	-5.1	-3.9	-3.1	-2.8	-4.1	-3.9	-4.4
-5.9	-5.0	-3.9	-5.4	-5.7	-6.3	-5.3	-4.9	-3.9	-3.8	-5.0	-5.6	-6.1	-6.1	-6.4	-7.5	-7.2	-7.6	-7.7	-7.8	-7.8	-7.3	-7.5	-7.6	-7.3	-7.4	-7.9	-8.2	-8.1	-7.2	-7.3	-6.5	-5.1	-4.5	-5.2	-5.6
-8.6	-8.0	-8.1	-7.7	-7.4	-6.8	-7.3	-7.0	-6.0	-6.1	-6.3	-7.1	-8.6	-7.9	-7.5	-7.0	-6.2	-6.5	-6.5	-6.4	-6.2	-6.7	-6.2	-5.9	-6.2	-6.4	-6.4	-7.6	-9.5	-10.0	-10.5	-8.8	-7.5	-6.6	-7.5	-7.8
-5.9	-7.4	-8.4	-9.5	-9.5	-8.6	-7.9	-7.6	-7.3	-6.5	-8.0	-8.8	-9.6	-8.9	-9.1	-8.2	-8.0	-6.3	-6.0	-4.2	-3.8	-4.2	-4.3	-3.2	-4.1	-5.7	-6.0	-6.4	-8.0	-7.3	-6.9	-4.9	-4.6	-3.9	-3.3	-4.5
-6.4	-6.5	-6.5	-6.2	-6.2	-6.5	-6.8	-6.1	-5.0	-2.7	-3.9	-5.4	-6.4	-5.2	-5.4	-4.9	-5.0	-5.3	-7.0	-5.8	-3.8	-5.2	-8.0	-7.8	-8.3	-7.3	-7.0	-6.4	-5.9	-5.7	-5.8	-5.3	-5.5	-3.3	-4.4	-6.1

Figure 61. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS11 (500 - 700 hPa)
NOAA18, using all observations



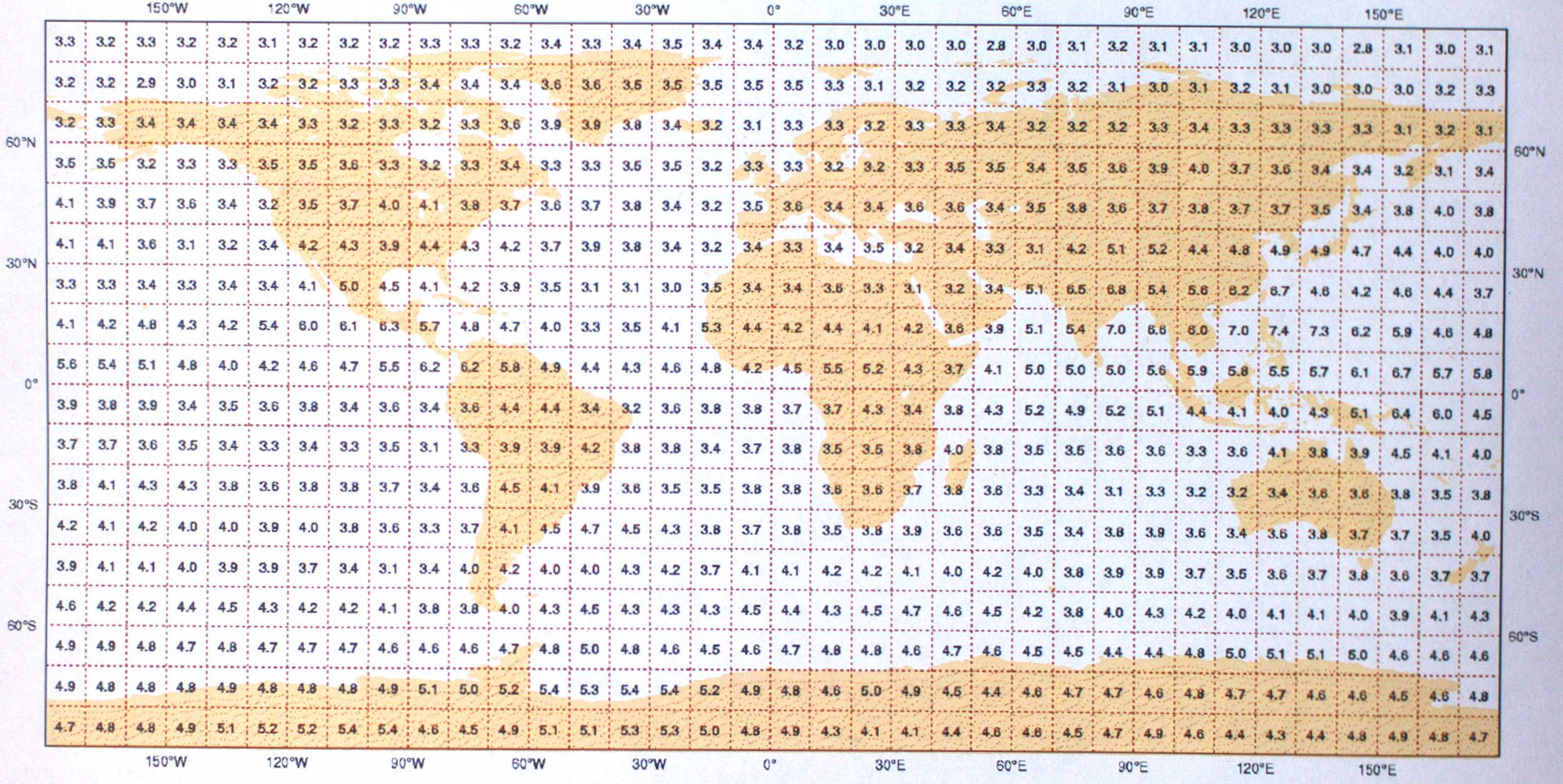
5.7	5.6	5.9	5.9	5.8	5.8	6.0	6.1	6.1	6.2	6.2	6.1	6.4	6.0	6.0	6.2	5.9	5.8	5.5	5.2	5.4	5.3	5.5	5.5	5.7	5.8	6.0	6.1	5.7	5.7	5.7	5.5	5.2	5.5	5.4	5.6
5.8	6.0	5.4	5.4	5.6	5.5	5.5	5.8	6.1	6.8	6.9	6.9	7.1	6.5	6.1	6.2	5.9	6.0	5.8	5.6	5.8	5.7	6.0	6.2	6.6	6.2	5.7	5.9	6.5	6.2	6.1	6.0	6.0	5.6	5.7	5.9
6.0	6.1	6.7	6.9	6.7	6.3	6.2	6.1	6.5	6.7	6.5	7.0	7.6	7.1	7.0	6.2	6.4	6.0	6.5	6.4	6.0	5.8	6.4	7.1	7.1	6.7	6.8	7.0	6.7	6.6	6.9	6.7	7.0	6.5	6.4	6.3
7.2	6.8	5.9	5.9	6.6	7.2	8.2	8.1	7.8	7.5	7.5	7.9	7.4	7.2	7.3	6.8	6.5	6.7	6.2	5.5	5.8	6.5	6.9	7.0	7.2	7.3	8.8	9.7	8.9	7.6	8.3	8.1	6.9	6.0	5.9	6.5
8.3	7.7	7.3	7.0	5.6	5.0	7.8	8.2	9.6	10.0	8.9	9.1	8.7	8.2	7.4	6.5	6.1	7.5	7.5	7.2	6.3	5.7	5.7	5.4	6.2	8.4	7.8	8.5	8.9	8.2	8.8	8.1	7.1	8.1	8.6	7.7
7.4	7.3	6.3	5.0	4.3	4.4	9.5	10.0	8.5	9.6	10.2	10.0	6.7	5.7	4.9	4.4	4.3	5.6	5.0	4.5	4.0	3.7	4.1	4.3	4.6	9.1	11.8	11.3	9.4	10.6	11.3	11.4	10.4	9.3	8.1	7.6
5.4	4.9	4.7	3.9	5.1	4.4	7.8	11.5	11.2	9.6	10.0	8.4	5.6	4.0	3.9	3.3	4.9	5.5	4.5	4.0	3.6	3.7	4.1	5.1	10.1	13.7	14.6	11.8	12.2	13.5	14.0	8.4	8.2	10.3	9.3	6.5
8.2	8.0	9.4	7.6	7.8	11.5	13.4	14.8	15.3	14.2	11.3	11.8	8.4	5.5	5.6	7.5	11.9	9.7	9.5	9.3	8.0	8.7	6.1	6.6	9.9	11.8	16.1	15.5	13.3	16.1	17.3	16.7	14.4	13.3	9.6	10.6
13.1	12.2	11.0	10.2	8.2	8.1	9.2	10.2	12.4	14.3	14.8	14.1	10.9	9.8	10.5	10.5	10.4	7.3	10.0	12.6	12.3	9.2	5.3	7.7	11.9	11.8	11.1	13.2	13.7	12.9	11.6	12.8	14.4	15.5	13.5	13.2
7.9	6.7	4.9	3.5	3.6	3.7	4.1	3.6	3.8	3.9	7.1	9.9	9.1	5.2	4.4	3.9	4.1	4.0	4.1	6.7	9.2	5.1	4.9	8.2	11.8	11.5	12.7	12.3	8.6	7.0	5.8	8.6	11.1	15.0	14.1	10.4
6.0	6.0	5.1	3.8	3.5	3.5	3.4	3.5	3.9	3.3	5.1	6.6	6.5	8.8	7.2	6.3	4.7	3.8	4.2	3.6	3.9	4.0	4.5	4.4	3.7	4.2	4.5	5.3	3.5	3.8	4.8	4.2	4.5	8.7	7.9	6.5
7.1	9.6	10.1	10.3	8.4	7.0	6.8	6.4	6.2	5.1	5.6	8.8	8.3	7.2	5.3	5.3	5.7	5.7	5.6	5.0	5.0	4.1	5.1	4.4	3.5	3.5	3.3	3.6	4.1	4.1	4.6	4.8	4.6	5.6	4.9	5.4
9.1	9.5	10.5	10.1	9.5	9.9	9.9	8.9	8.8	8.2	9.4	11.5	11.7	12.0	9.8	9.4	8.0	9.6	8.3	6.8	8.4	8.7	6.2	6.0	5.5	5.2	5.9	6.5	6.2	6.0	6.4	7.5	7.1	8.2	7.0	7.9
8.0	7.9	8.1	8.8	8.9	8.6	8.3	7.5	6.8	8.1	10.9	11.5	10.3	10.6	10.8	10.1	9.9	11.0	10.2	9.5	9.7	9.3	8.9	8.2	8.5	8.3	9.4	10.2	9.6	8.8	8.3	8.2	7.9	8.3	8.0	8.9
10.0	8.3	8.2	9.9	9.8	9.8	8.5	7.8	6.8	6.9	8.1	8.5	9.7	9.3	9.2	9.6	9.5	10.2	9.7	9.9	10.3	9.9	10.2	10.0	9.4	9.1	10.0	10.8	10.9	9.8	10.2	9.7	8.1	8.0	8.5	9.0
11.3	10.5	10.3	9.7	10.1	9.7	9.7	9.1	8.7	8.4	8.7	10.2	11.5	10.2	9.7	8.5	8.1	8.5	9.0	8.9	8.7	9.2	9.4	9.3	9.5	9.0	9.2	9.8	11.5	12.3	12.7	12.4	11.0	9.7	10.1	9.7
8.8	9.3	9.1	10.4	10.8	10.3	10.3	10.2	10.8	11.0	11.2	12.6	12.2	11.5	11.0	10.6	11.4	11.1	11.3	12.0	12.6	12.4	11.8	11.8	10.3	10.8	11.2	11.5	12.5	13.1	13.8	12.6	11.6	10.8	9.8	8.4
10.2	10.5	10.7	11.5	11.6	12.3	12.1	11.8	12.0	10.3	9.7	10.9	11.6	11.4	11.6	11.6	11.4	12.1	13.9	13.8	12.6	13.1	14.9	15.9	16.1	15.1	15.4	14.5	13.7	14.0	13.6	12.5	12.4	11.8	11.2	10.3

Figure 62. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS4 (400 hPa)
NOAA18, using all observations



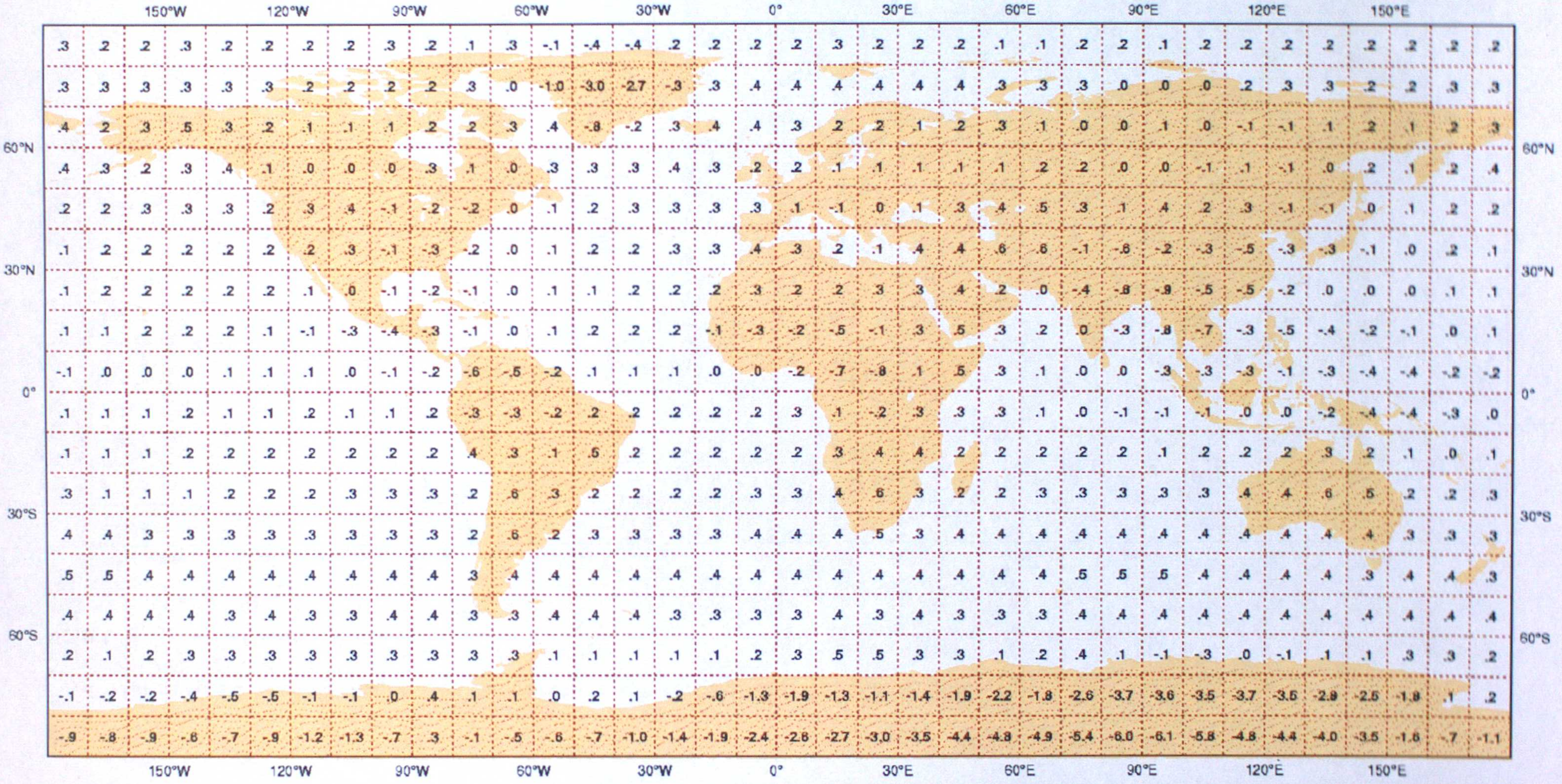
-.4	-.5	-.6	-.6	-.6	-.7	-.7	-.7	-.7	-.7	-.6	-.6	-.6	-.6	-.5	-.5	-.7	-.7	-.8	-.8	-.6	-.5	-.4	-.5	-.5	-.4	-.4	-.6	-.5	-.5	-.6	-.6	-.6	-.5	-.6	-.6
-.6	-.6	-.7	-.7	-.6	-.7	-.7	-.6	-.6	-.8	-.8	-.8	-.9	-.8	-.7	-.7	-.8	-.6	-.6	-.6	-.7	-.7	-.7	-.7	-.6	-.5	-.5	-.5	-.5	-.4	-.4	-.6	-.5	-.4	-.5	-.5
-.7	-.8	-.9	-1.0	-1.1	-1.0	-1.0	-.9	-.9	-.9	-.9	-.9	-1.0	-.9	-.9	-1.1	-1.2	-1.3	-1.2	-1.2	-.9	-.7	-.8	-1.0	-1.0	-1.0	-1.1	-1.2	-1.1	-1.3	-1.2	-1.1	-.9	-.7	-.6	-.6
-1.2	-1.2	-.9	-.8	-1.0	-1.2	-1.3	-1.2	-1.2	-1.1	-1.2	-1.5	-1.6	-1.9	-1.9	-1.4	-1.3	-1.5	-1.5	-1.4	-1.1	-1.1	-1.0	-1.1	-1.2	-1.3	-1.7	-1.9	-1.5	-1.4	-1.6	-1.5	-1.1	-.9	-1.0	-1.0
-2.1	-2.0	-1.4	-1.0	-.8	-.8	-1.3	-1.2	-1.4	-1.4	-1.7	-2.1	-2.1	-1.8	-1.8	-1.2	-.9	-1.1	-1.2	-.9	-.7	-.7	-1.1	-1.0	-1.2	-1.3	-1.3	-1.6	-2.0	-1.8	-1.7	-1.6	-1.3	-1.4	-1.7	-1.8
-1.6	-1.4	-.9	-.8	-.8	-.7	-1.9	-2.3	-2.1	-2.3	-2.5	-2.2	-1.4	-1.2	-1.1	-.7	-.8	-.9	-.6	-.7	-.7	-1.1	-1.5	-1.5	-1.5	-2.0	-2.9	-3.1	-2.2	-2.7	-3.1	-3.8	-3.2	-1.9	-1.5	-1.8
-1.0	-.9	-.8	-.3	-.6	-.8	-1.6	-3.3	-3.0	-2.5	-2.0	-1.5	-1.1	-.9	-.9	-1.1	-1.1	-1.4	-.6	-.6	-1.1	-1.5	-1.7	-1.9	-3.3	-4.9	-6.1	-4.7	-4.3	-4.6	-4.4	-2.4	-1.8	-2.2	-1.7	-1.2
-1.8	-1.7	-1.9	-1.4	-1.1	-2.5	-4.2	-5.1	-6.2	-4.8	-3.2	-3.0	-1.9	-1.0	-1.4	-2.0	-3.6	-3.3	-2.6	-2.2	-1.7	-1.9	-1.9	-1.7	-3.1	-4.1	-7.0	-7.3	-6.1	-7.0	-8.5	-7.0	-5.3	-4.3	-2.2	-2.3
-3.3	-2.6	-2.8	-2.1	-1.6	-1.9	-2.3	-2.5	-3.4	-4.1	-4.4	-3.7	-2.4	-2.0	-2.7	-2.5	-2.7	-2.1	-2.5	-3.3	-3.3	-1.9	-1.5	-2.5	-4.2	-4.6	-4.2	-5.8	-4.8	-4.6	-4.1	-4.3	-6.2	-6.4	-4.1	-3.9
-1.7	-1.4	-1.4	-.9	-.5	-1.0	-.8	-.5	-.4	-.7	-1.4	-2.2	-1.6	-.7	-1.0	-.8	-.5	-1.1	-1.6	-1.2	-1.5	-1.1	-1.5	-2.3	-3.6	-3.1	-4.0	-4.3	-2.7	-1.8	-1.6	-1.9	-3.1	-6.4	-4.4	-2.6
-1.1	-1.3	-1.4	-1.1	-.8	-1.2	-1.0	-.8	-1.0	-.8	-.7	-.7	-.8	-1.3	-1.2	-1.1	-.8	-.7	-.8	-.8	-.6	-.7	-1.1	-.7	-.6	-.8	-1.0	-1.5	-.9	-.4	-.7	-.9	-1.4	-2.3	-1.9	-1.4
-1.8	-2.4	-2.5	-2.5	-2.1	-1.5	-1.1	-1.3	-.9	-.3	-.6	-1.3	-1.1	-1.3	-.9	-.6	-.2	-1.0	-1.1	-.6	-1.1	-1.5	-1.2	-.6	-.2	-.2	-.5	-.7	-.5	-.6	-.8	-.8	-1.0	-.6	-.6	-1.0
-1.2	-1.6	-2.0	-2.1	-1.9	-1.6	-1.4	-1.1	-1.1	-1.2	-1.4	-1.6	-1.8	-2.3	-2.1	-1.5	-1.3	-1.3	-1.4	-1.4	-1.6	-1.6	-1.1	-.8	-.5	-.5	-.7	-.7	-.7	-.7	-.8	-1.2	-1.1	-.9	-.6	-.5
-1.0	-1.0	-.9	-1.1	-1.2	-1.4	-1.4	-1.2	-1.0	-.8	-1.3	-1.6	-1.7	-1.9	-1.8	-2.3	-2.2	-1.7	-1.6	-1.5	-1.9	-2.0	-1.9	-1.5	-1.1	-1.1	-1.3	-1.7	-1.5	-1.3	-.9	-.7	-.7	-1.1	-1.1	-1.0
-1.3	-1.1	-.8	-1.2	-1.5	-2.0	-1.9	-1.5	-1.0	-1.0	-1.3	-1.6	-1.6	-1.5	-1.5	-1.7	-1.5	-1.6	-1.7	-1.8	-1.7	-1.6	-1.5	-1.5	-1.4	-1.3	-1.5	-1.6	-1.6	-1.4	-1.5	-1.3	-1.1	-.9	-1.1	-1.3
-2.1	-2.0	-2.1	-2.0	-1.8	-1.6	-1.8	-1.8	-1.6	-1.7	-1.6	-1.9	-2.4	-2.2	-2.1	-1.8	-1.2	-1.1	-1.3	-1.4	-1.4	-1.5	-1.4	-1.3	-1.4	-1.4	-1.4	-1.7	-2.3	-2.2	-2.5	-2.2	-2.0	-1.7	-1.8	-2.0
-1.5	-1.7	-2.1	-2.4	-2.7	-2.7	-2.4	-2.2	-2.3	-2.3	-2.6	-3.0	-3.1	-2.8	-2.9	-2.8	-2.8	-2.5	-1.8	-1.7	-1.4	-1.6	-1.5	-1.0	-1.5	-2.1	-2.0	-2.0	-2.2	-2.0	-1.8	-1.6	-1.4	-1.3	-1.4	-1.4
-1.8	-1.7	-1.7	-2.1	-2.2	-2.4	-2.5	-2.3	-2.3	-1.7	-1.8	-2.1	-2.5	-2.0	-2.2	-2.1	-1.9	-1.6	-2.1	-1.4	-1.0	-1.0	-1.0	-.8	-1.2	-1.0	-1.1	-1.1	-1.1	-1.1	-1.2	-1.2	-1.5	-1.4	-1.5	-1.7

Figure 63. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: HIRS4 (400 hPa)
NOAA18, using all observations



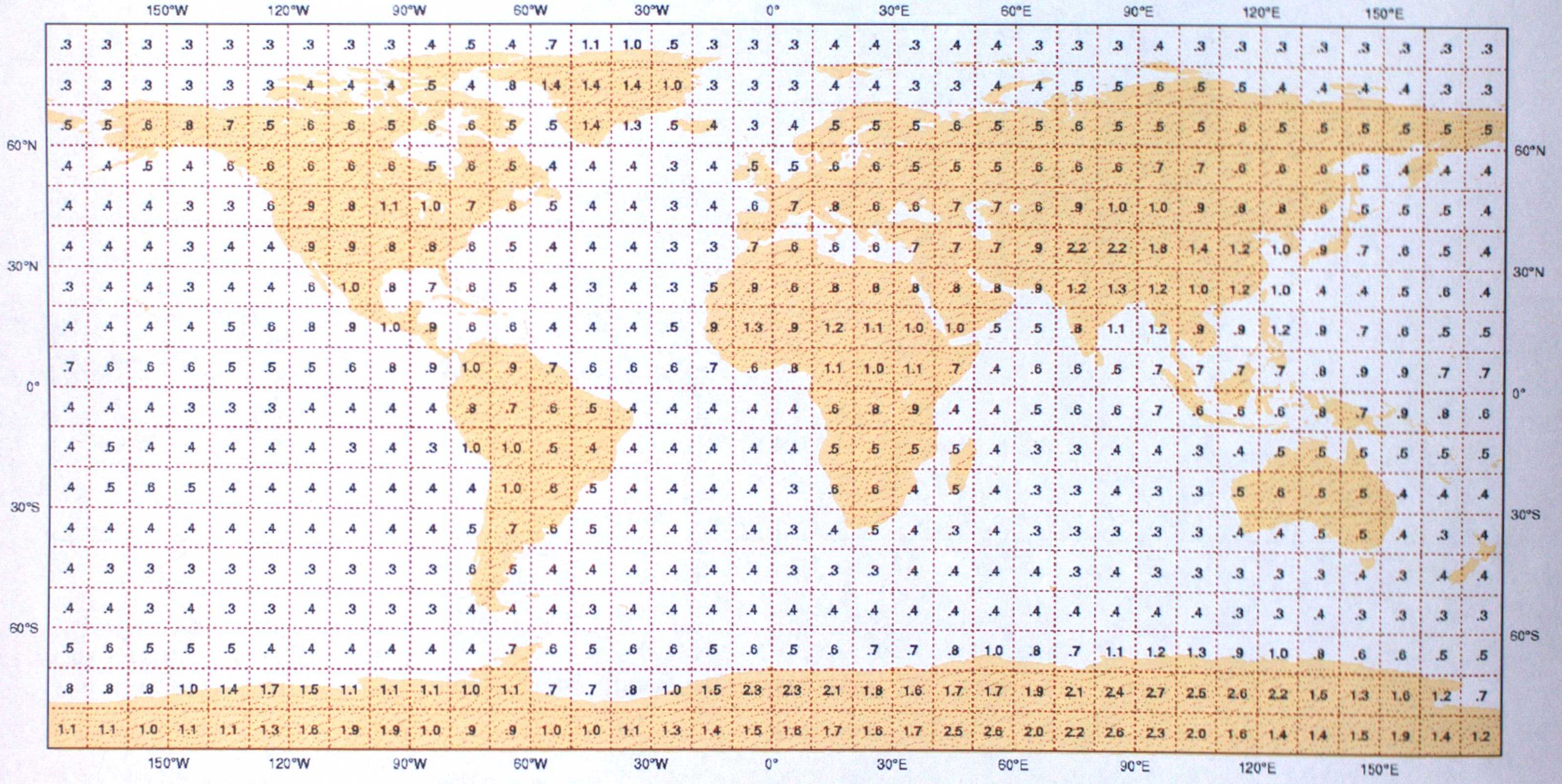
3.3	3.2	3.3	3.2	3.2	3.1	3.2	3.2	3.2	3.3	3.3	3.2	3.4	3.3	3.4	3.5	3.4	3.4	3.2	3.0	3.0	3.0	3.0	2.8	3.0	3.1	3.2	3.1	3.1	3.0	3.0	3.0	2.8	3.1	3.0	3.1
3.2	3.2	2.9	3.0	3.1	3.2	3.2	3.3	3.3	3.4	3.4	3.4	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.3	3.1	3.2	3.2	3.2	3.3	3.2	3.1	3.0	3.1	3.2	3.1	3.0	3.0	3.0	3.2	3.3
3.2	3.3	3.4	3.4	3.4	3.4	3.3	3.2	3.3	3.2	3.3	3.6	3.9	3.9	3.8	3.4	3.2	3.1	3.3	3.3	3.2	3.3	3.3	3.4	3.2	3.2	3.2	3.3	3.4	3.3	3.3	3.3	3.3	3.1	3.2	3.1
3.5	3.5	3.2	3.3	3.3	3.5	3.5	3.6	3.3	3.2	3.3	3.4	3.3	3.3	3.5	3.5	3.2	3.3	3.3	3.2	3.2	3.3	3.5	3.5	3.4	3.5	3.6	3.9	4.0	3.7	3.6	3.4	3.4	3.2	3.1	3.4
4.1	3.9	3.7	3.6	3.4	3.2	3.5	3.7	4.0	4.1	3.8	3.7	3.6	3.7	3.8	3.4	3.2	3.5	3.6	3.4	3.4	3.6	3.6	3.4	3.5	3.8	3.6	3.7	3.8	3.7	3.7	3.5	3.4	3.8	4.0	3.8
4.1	4.1	3.6	3.1	3.2	3.4	4.2	4.3	3.9	4.4	4.3	4.2	3.7	3.9	3.8	3.4	3.2	3.4	3.3	3.4	3.5	3.2	3.4	3.3	3.1	4.2	5.1	5.2	4.4	4.8	4.9	4.9	4.7	4.4	4.0	4.0
3.3	3.3	3.4	3.3	3.4	3.4	4.1	5.0	4.5	4.1	4.2	3.9	3.5	3.1	3.1	3.0	3.5	3.4	3.4	3.6	3.3	3.1	3.2	3.4	5.1	6.5	6.8	5.4	5.6	6.2	6.7	4.6	4.2	4.6	4.4	3.7
4.1	4.2	4.8	4.3	4.2	5.4	6.0	6.1	6.3	5.7	4.8	4.7	4.0	3.3	3.5	4.1	5.3	4.4	4.2	4.4	4.1	4.2	3.6	3.9	5.1	5.4	7.0	6.6	6.0	7.0	7.4	7.3	6.2	5.9	4.6	4.8
5.6	5.4	5.1	4.8	4.0	4.2	4.6	4.7	5.5	6.2	6.2	5.8	4.9	4.4	4.3	4.6	4.8	4.2	4.5	5.5	5.2	4.3	3.7	4.1	5.0	5.0	5.0	5.6	5.9	5.8	5.5	5.7	6.1	6.7	5.7	5.8
3.9	3.8	3.9	3.4	3.5	3.6	3.8	3.4	3.6	3.4	3.6	4.4	4.4	3.4	3.2	3.6	3.8	3.8	3.7	3.7	4.3	3.4	3.8	4.3	5.2	4.9	5.2	5.1	4.4	4.1	4.0	4.3	5.1	6.4	6.0	4.5
3.7	3.7	3.6	3.5	3.4	3.3	3.4	3.3	3.5	3.1	3.3	3.9	3.9	4.2	3.8	3.8	3.4	3.7	3.8	3.5	3.5	3.8	4.0	3.8	3.5	3.5	3.6	3.6	3.3	3.6	4.1	3.8	3.9	4.5	4.1	4.0
3.8	4.1	4.3	4.3	3.8	3.6	3.8	3.8	3.7	3.4	3.6	4.5	4.1	3.9	3.6	3.5	3.5	3.8	3.8	3.6	3.6	3.7	3.8	3.6	3.3	3.4	3.1	3.3	3.2	3.2	3.4	3.6	3.6	3.8	3.5	3.8
4.2	4.1	4.2	4.0	4.0	3.9	4.0	3.8	3.6	3.3	3.7	4.1	4.5	4.7	4.5	4.3	3.8	3.7	3.8	3.5	3.8	3.9	3.6	3.6	3.5	3.4	3.8	3.9	3.6	3.4	3.6	3.8	3.7	3.7	3.5	4.0
3.9	4.1	4.1	4.0	3.9	3.9	3.7	3.4	3.1	3.4	4.0	4.2	4.0	4.0	4.3	4.2	3.7	4.1	4.1	4.2	4.2	4.1	4.0	4.2	4.0	3.8	3.9	3.9	3.7	3.5	3.6	3.7	3.8	3.6	3.7	3.7
4.6	4.2	4.2	4.4	4.5	4.3	4.2	4.2	4.1	3.8	3.8	4.0	4.3	4.5	4.3	4.3	4.3	4.5	4.4	4.3	4.5	4.7	4.6	4.5	4.2	3.8	4.0	4.3	4.2	4.0	4.1	4.1	4.0	3.9	4.1	4.3
4.9	4.9	4.8	4.7	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.7	4.8	5.0	4.8	4.6	4.5	4.6	4.7	4.8	4.8	4.6	4.7	4.6	4.5	4.5	4.4	4.4	4.8	5.0	5.1	5.1	5.0	4.6	4.6	4.6
4.9	4.8	4.8	4.8	4.9	4.8	4.8	4.8	4.9	5.1	5.0	5.2	5.4	5.3	5.4	5.4	5.2	4.9	4.8	4.6	5.0	4.9	4.5	4.4	4.6	4.7	4.7	4.6	4.8	4.7	4.7	4.6	4.6	4.5	4.6	4.8
4.7	4.8	4.8	4.9	5.1	5.2	5.2	5.4	5.4	4.6	4.5	4.9	5.1	5.1	5.3	5.3	5.0	4.8	4.9	4.3	4.1	4.1	4.4	4.6	4.6	4.5	4.7	4.9	4.6	4.4	4.3	4.4	4.8	4.9	4.8	4.7

Figure 64. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-5 (700 hPa)
NOAA18, using all observations



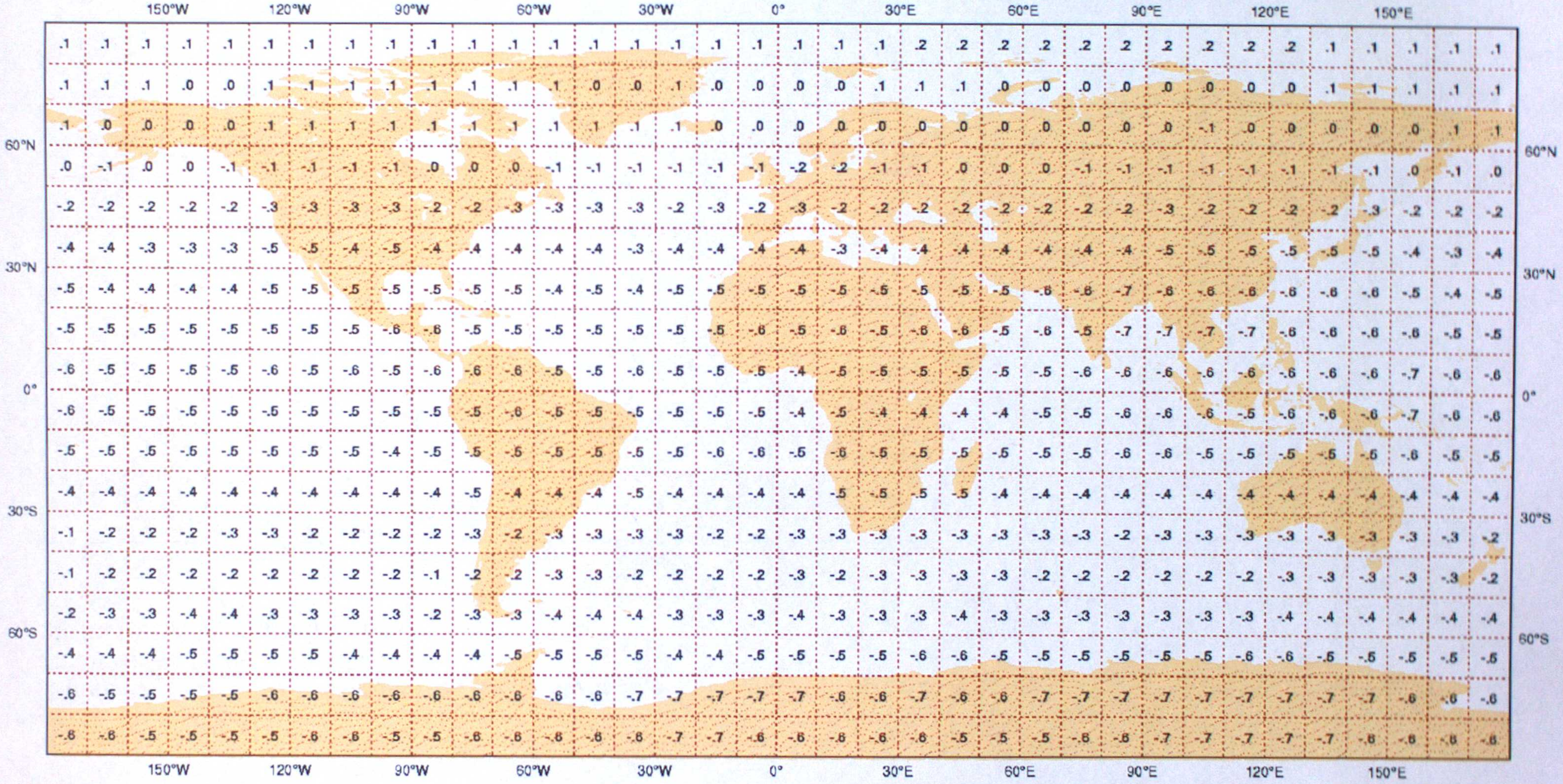
.3	.2	.2	.3	.2	.2	.2	.2	.3	.2	.1	.3	-.1	-.4	-.4	.2	.2	.2	.2	.3	.2	.2	.2	.1	.1	.2	.2	.1	.2	.2	.2	.2	.2	.2	.2	.2
.3	.3	.3	.3	.3	.3	.2	.2	.2	.2	.3	.0	-1.0	-3.0	-2.7	-.3	.3	.4	.4	.4	.4	.4	.4	.3	.3	.3	.0	.0	.0	.2	.3	.3	.2	.2	.3	.3
.4	.2	.3	.5	.3	.2	.1	.1	.1	.2	.2	.3	.4	-.8	-.2	.3	.4	.4	.3	.2	.2	.1	.2	.3	.1	.0	.0	.1	.0	-.1	-.1	.1	.2	.1	.2	.3
.4	.3	.2	.3	.4	.1	.0	.0	.0	.3	.1	.0	.3	.3	.3	.4	.3	.2	.2	.1	.1	.1	.1	.1	.2	.2	.0	.0	-.1	.1	-.1	.0	.2	.1	.2	.4
.2	.2	.3	.3	.3	.2	.3	.4	-.1	-.2	-.2	.0	.1	.2	.3	.3	.3	.3	.1	-.1	.0	.1	.3	.4	.5	.3	.1	.4	.2	.3	-.1	-.1	.0	.1	.2	.2
.1	.2	.2	.2	.2	.2	.2	.3	-.1	-.3	-.2	.0	.1	.2	.2	.3	.3	.4	.3	.2	.1	.4	.4	.6	.6	-.1	-.6	-.2	-.3	-.5	-.3	-.3	-.1	.0	.2	.1
.1	.2	.2	.2	.2	.2	.1	.0	-.1	-.2	-.1	.0	.1	.1	.2	.2	.2	.3	.2	.2	.3	.3	.4	.2	.0	-.4	-.8	-.9	-.5	-.5	-.2	.0	.0	.0	.1	.1
.1	.1	.2	.2	.2	.1	-.1	-.3	-.4	-.3	-.1	.0	.1	.2	.2	.2	-.1	-.3	-.2	-.5	-.1	.3	.5	.3	.2	.0	-.3	-.8	-.7	-.3	-.5	-.4	-.2	-.1	.0	.1
-.1	.0	.0	.0	.1	.1	.1	.0	-.1	-.2	-.6	-.5	-.2	.1	.1	.1	.0	.0	-.2	-.7	-.8	.1	.5	.3	.1	.0	.0	-.3	-.3	-.3	-.1	-.3	-.4	-.4	-.2	-.2
.1	.1	.1	.2	.1	.1	.2	.1	.1	.2	-.3	-.3	-.2	.2	.2	.2	.2	.2	.3	.1	-.2	.3	.3	.3	.1	.0	-.1	-.1	-.1	.0	.0	-.2	-.4	-.4	-.3	.0
.1	.1	.1	.2	.2	.2	.2	.2	.2	.2	.4	.3	.1	.5	.2	.2	.2	.2	.2	.3	.4	.4	.2	.2	.2	.2	.2	.1	.2	.2	.2	.3	.2	.1	.0	.1
.3	.1	.1	.1	.2	.2	.2	.3	.3	.3	.2	.6	.3	.2	.2	.2	.2	.3	.3	.4	.6	.3	.2	.2	.3	.3	.3	.3	.3	.4	.4	.6	.5	.2	.2	.3
.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.2	.6	.2	.3	.3	.3	.3	.4	.4	.4	.5	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.3	.3
.5	.5	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.4	.4	.4	.4	.3	.4	.4	.3
.4	.4	.4	.4	.3	.4	.3	.3	.4	.4	.3	.3	.4	.4	.4	.3	.3	.3	.3	.4	.3	.4	.3	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.2	.1	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.1	.1	.1	.1	.1	.2	.3	.5	.5	.3	.3	.1	.2	.4	.1	-.1	-.3	.0	-.1	.1	.1	.3	.3	.2
-.1	-.2	-.2	-.4	-.5	-.5	-.1	-.1	.0	.4	.1	.1	.0	.2	.1	-.2	-.6	-1.3	-1.9	-1.3	-1.1	-1.4	-1.9	-2.2	-1.8	-2.6	-3.7	-3.6	-3.5	-3.7	-3.5	-2.9	-2.5	-1.8	.1	.2
-.9	-.8	-.9	-.6	-.7	-.9	-1.2	-1.3	-.7	.3	-.1	-.5	-.6	-.7	-1.0	-1.4	-1.9	-2.4	-2.6	-2.7	-3.0	-3.5	-4.4	-4.8	-4.9	-5.4	-6.0	-6.1	-5.8	-4.8	-4.4	-4.0	-3.5	-1.6	-.7	-1.1

Figure 65. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-5 (700 hPa)
NOAA18, using all observations



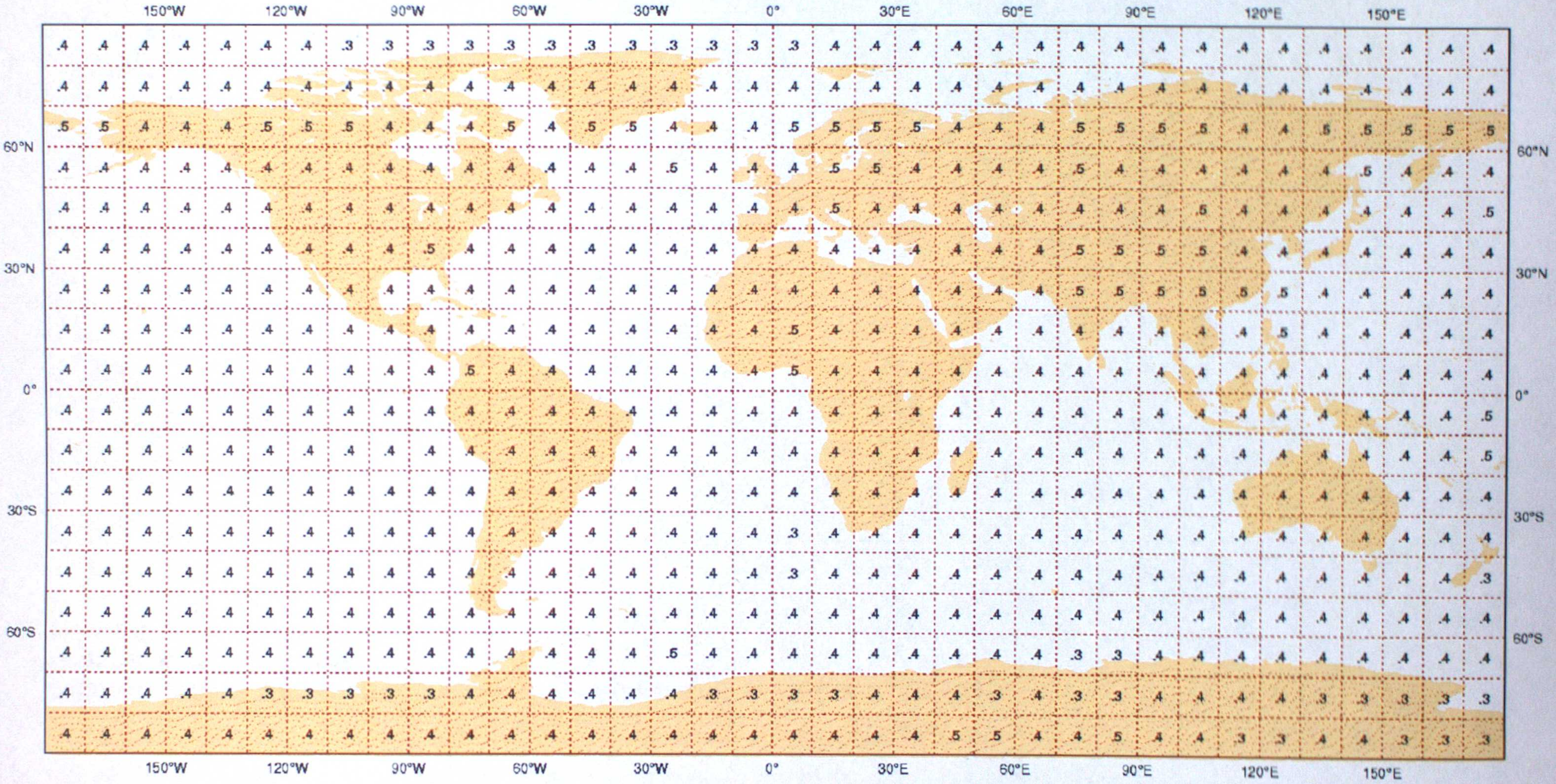
.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.5	.4	.7	1.1	1.0	.5	.3	.3	.3	.4	.4	.3	.4	.4	.3	.3	.3	.4	.3	.3	.3	.3	.3	.3	.3	.3
.3	.3	.3	.3	.3	.3	.4	.4	.4	.5	.4	.8	1.4	1.4	1.4	1.0	.3	.3	.3	.4	.4	.3	.3	.4	.4	.5	.5	.6	.5	.5	.4	.4	.4	.4	.3	.3
.5	.5	.6	.8	.7	.5	.6	.6	.5	.6	.6	.5	.5	1.4	1.3	.5	.4	.3	.4	.5	.5	.5	.6	.5	.5	.6	.5	.5	.5	.6	.5	.5	.5	.5	.5	.5
.4	.4	.5	.4	.6	.6	.6	.6	.6	.5	.6	.5	.4	.4	.4	.3	.4	.5	.5	.6	.6	.5	.5	.5	.6	.6	.6	.7	.7	.6	.6	.6	.5	.4	.4	.4
.4	.4	.4	.3	.3	.6	.9	.8	1.1	1.0	.7	.6	.5	.4	.4	.3	.4	.6	.7	.8	.6	.6	.7	.7	.6	.9	1.0	1.0	.9	.8	.8	.6	.5	.5	.5	.4
.4	.4	.4	.3	.4	.4	.9	.9	.8	.8	.6	.5	.4	.4	.4	.3	.3	.7	.6	.6	.6	.7	.7	.7	.9	2.2	2.2	1.8	1.4	1.2	1.0	.9	.7	.6	.5	.4
.3	.4	.4	.3	.4	.4	.6	1.0	.8	.7	.6	.5	.4	.3	.4	.3	.5	.9	.6	.8	.8	.8	.8	.8	.9	1.2	1.3	1.2	1.0	1.2	1.0	.4	.4	.5	.6	.4
.4	.4	.4	.4	.5	.6	.8	.9	1.0	.9	.6	.6	.4	.4	.4	.5	.9	1.3	.9	1.2	1.1	1.0	1.0	.5	.5	.8	1.1	1.2	.9	.9	1.2	.9	.7	.6	.5	.5
.7	.6	.6	.6	.5	.5	.5	.6	.8	.9	1.0	.9	.7	.6	.6	.6	.7	.6	.8	1.1	1.0	1.1	.7	.4	.6	.6	.5	.7	.7	.7	.7	.8	.9	.9	.7	.7
.4	.4	.4	.3	.3	.3	.4	.4	.4	.4	.8	.7	.6	.5	.4	.4	.4	.4	.4	.6	.8	.9	.4	.4	.5	.6	.6	.7	.6	.6	.6	.8	.7	.9	.8	.6
.4	.5	.4	.4	.4	.4	.4	.3	.4	.3	1.0	1.0	.5	.4	.4	.4	.4	.4	.4	.5	.5	.5	.5	.4	.3	.3	.4	.4	.3	.4	.5	.5	.5	.5	.5	.5
.4	.5	.6	.5	.4	.4	.4	.4	.4	.4	.4	1.0	.6	.5	.4	.4	.4	.4	.3	.6	.6	.4	.5	.4	.3	.3	.4	.3	.3	.5	.6	.5	.5	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.7	.6	.5	.4	.4	.4	.4	.3	.4	.5	.4	.3	.4	.3	.3	.3	.3	.3	.4	.4	.5	.5	.4	.3	.4
.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.6	.5	.4	.4	.4	.4	.4	.4	.3	.3	.3	.4	.4	.4	.4	.3	.4	.3	.3	.3	.3	.3	.4	.3	.4	.4
.4	.4	.3	.4	.3	.3	.4	.3	.3	.3	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.3	.4	.3	.3	.3	.3
.5	.6	.5	.5	.5	.4	.4	.4	.4	.4	.4	.7	.6	.5	.6	.6	.5	.6	.5	.6	.7	.7	.8	1.0	.8	.7	1.1	1.2	1.3	.9	1.0	.8	.6	.6	.5	.5
.8	.8	.8	1.0	1.4	1.7	1.5	1.1	1.1	1.1	1.0	1.1	.7	.7	.8	1.0	1.5	2.3	2.3	2.1	1.8	1.6	1.7	1.7	1.9	2.1	2.4	2.7	2.5	2.6	2.2	1.5	1.3	1.6	1.2	.7
1.1	1.1	1.0	1.1	1.1	1.3	1.6	1.9	1.9	1.0	.9	.9	1.0	1.0	1.1	1.3	1.4	1.5	1.6	1.7	1.6	1.7	2.5	2.6	2.0	2.2	2.6	2.3	2.0	1.6	1.4	1.4	1.5	1.9	1.4	1.2

Figure 66. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-7 (300 hPa)
NOAA18, using all observations



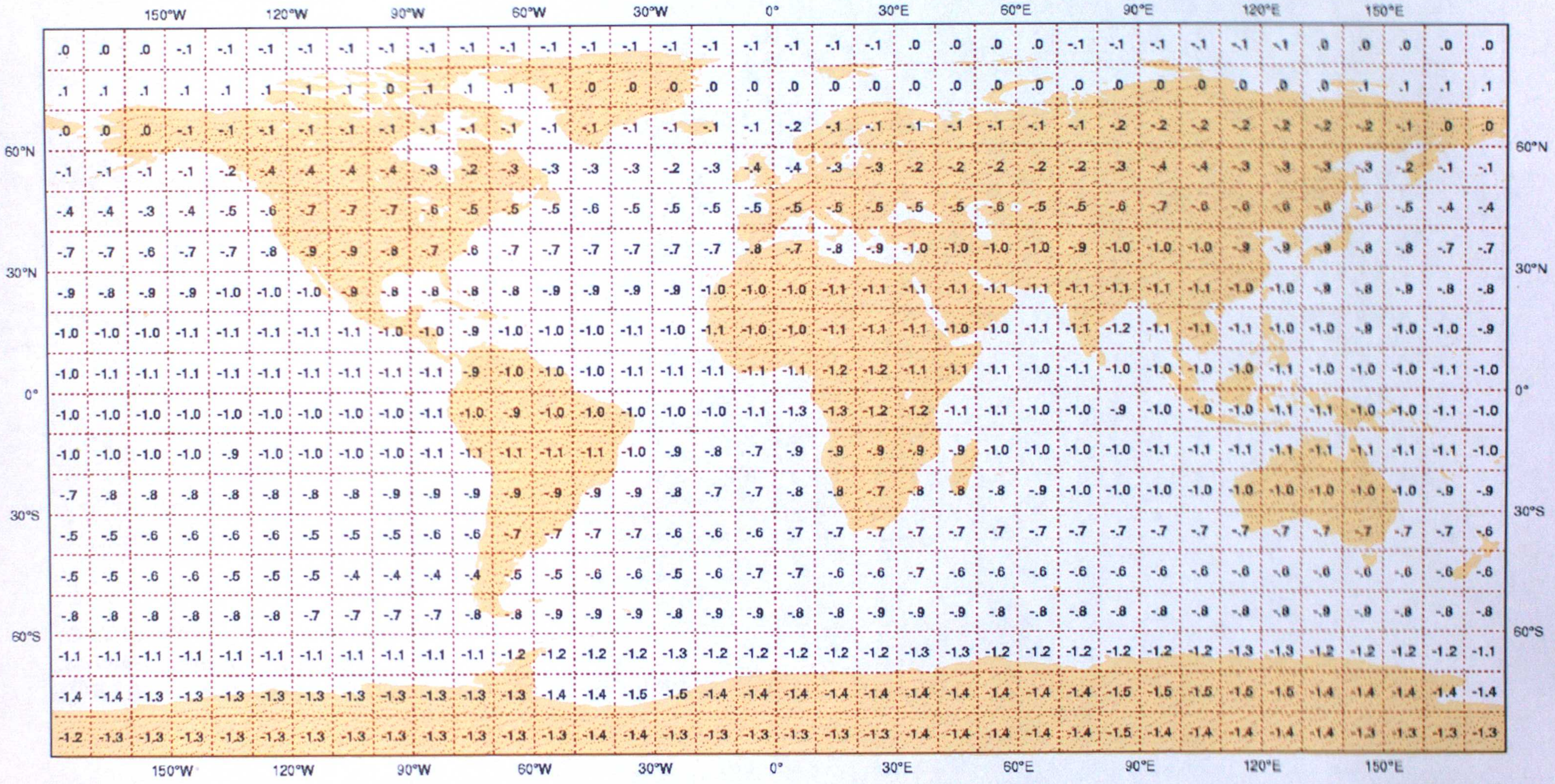
.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.1	.1	.1	.1	.1
.1	.1	.1	.0	.0	.1	.1	.1	.1	.1	.1	.1	.1	.0	.0	.1	.0	.0	.0	.0	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1
.1	.0	.0	.0	.0	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	-.1	.0	.0	.0	.0	.0	.1	.1
.0	-.1	.0	.0	-.1	-.1	-.1	-.1	-.1	.0	.0	.0	-.1	-.1	-.1	-.1	-.1	-.1	-.2	-.2	-.1	-.1	.0	.0	.0	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	.0	-.1	.0
-.2	-.2	-.2	-.2	-.2	-.3	-.3	-.3	-.3	-.2	-.2	-.3	-.3	-.3	-.3	-.2	-.3	-.2	-.3	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.3	-.2	-.2	-.2	-.2	-.3	-.2	-.2	-.2
-.4	-.4	-.3	-.3	-.3	-.5	-.5	-.4	-.5	-.4	-.4	-.4	-.4	-.4	-.3	-.4	-.4	-.4	-.4	-.3	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.5	-.5	-.5	-.5	-.5	-.5	-.4	-.3	-.4
-.5	-.4	-.4	-.4	-.4	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.4	-.5	-.4	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.6	-.7	-.6	-.6	-.6	-.6	-.6	-.6	-.5	-.4	-.5
-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.6	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.5	-.6	-.5	-.6	-.6	-.5	-.6	-.5	-.7	-.7	-.7	-.7	-.6	-.6	-.6	-.6	-.5	-.5
-.6	-.5	-.5	-.5	-.5	-.6	-.5	-.6	-.5	-.6	-.6	-.6	-.5	-.5	-.6	-.5	-.5	-.5	-.4	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.7	-.6	-.6
-.6	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.5	-.5	-.5	-.5	-.5	-.5	-.4	-.5	-.4	-.4	-.4	-.4	-.5	-.5	-.6	-.6	-.6	-.5	-.6	-.6	-.6	-.7	-.6	-.6
-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.4	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.6	-.5	-.6	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.6	-.5	-.5	-.5	-.5	-.6	-.6	-.5	-.5
-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.5	-.4	-.4	-.4	-.5	-.4	-.4	-.4	-.4	-.5	-.5	-.5	-.5	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4	-.4
-.1	-.2	-.2	-.2	-.3	-.3	-.2	-.2	-.2	-.2	-.3	-.2	-.3	-.3	-.3	-.3	-.2	-.2	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.2	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.2
-.1	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.1	-.2	-.2	-.3	-.3	-.2	-.2	-.2	-.2	-.3	-.2	-.3	-.3	-.3	-.3	-.2	-.2	-.2	-.2	-.2	-.2	-.3	-.3	-.3	-.3	-.3	-.2
-.2	-.3	-.3	-.4	-.4	-.3	-.3	-.3	-.3	-.2	-.3	-.3	-.4	-.4	-.4	-.3	-.3	-.3	-.4	-.3	-.3	-.3	-.4	-.3	-.3	-.3	-.3	-.3	-.3	-.3	-.4	-.4	-.4	-.4	-.4	-.4
-.4	-.4	-.4	-.5	-.5	-.5	-.5	-.4	-.4	-.4	-.4	-.5	-.5	-.5	-.5	-.4	-.4	-.5	-.5	-.5	-.5	-.6	-.6	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.6	-.5	-.5	-.5	-.5	-.5
-.6	-.5	-.5	-.5	-.5	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.7	-.7	-.7	-.7	-.7	-.6	-.6	-.7	-.6	-.6	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.6	-.6	-.6
-.6	-.6	-.5	-.5	-.5	-.5	-.6	-.6	-.5	-.5	-.6	-.6	-.6	-.6	-.6	-.7	-.7	-.6	-.6	-.6	-.6	-.6	-.5	-.5	-.5	-.6	-.6	-.7	-.7	-.7	-.7	-.7	-.6	-.6	-.6	-.6

Figure 67. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-7 (300 hPa)
NOAA18, using all observations



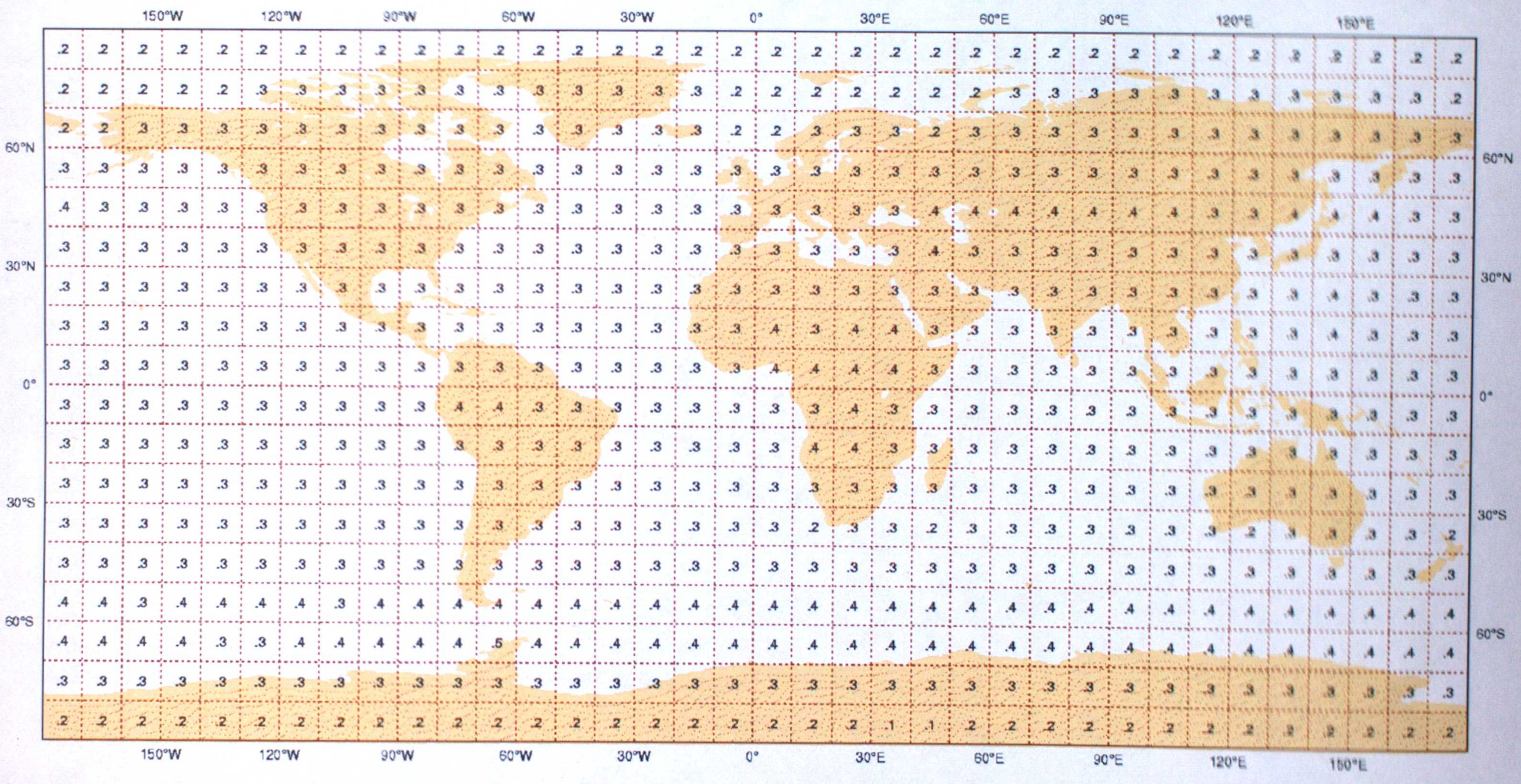
.4	.4	.4	.4	.4	.4	.4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.5	.5	.4	.4	.4	.5	.5	.5	.4	.4	.4	.5	.4	.5	.5	.4	.4	.4	.5	.5	.5	.5	.4	.4	.4	.5	.5	.5	.5	.4	.4	.5	.5	.5	.5	.5
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.5	.5	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.5
.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.5	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.5	.5	.5	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.4	.4	.4	.4	.4	.4	.4	.4	.4	.3	.3	.4	.4	.4	.4	.4	.4	.4	.4	.4
.4	.4	.4	.4	.4	.3	.3	.3	.3	.3	.4	.4	.4	.4	.4	.4	.3	.3	.3	.3	.4	.4	.4	.3	.4	.3	.3	.4	.4	.4	.4	.3	.3	.3	.3	.3
.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.5	.5	.4	.4	.5	.4	.4	.3	.3	.4	.4	.3	.3	.3

Figure 68. ATOVS MEAN O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-9 (100 hPa)
NOAA18, using all observations



.0	.0	.0	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	.0	.0	.0	.0	-.1	-.1	-.1	-.1	-.1	-.1	.0	.0	.0	.0	.0
.1	.1	.1	.1	.1	.1	.1	.1	.0	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.1
.0	.0	.0	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.2	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.2	-.2	-.2	-.2	-.2	-.2	-.2	-.1	.0	.0
-.1	-.1	-.1	-.1	-.2	-.4	-.4	-.4	-.4	-.3	-.2	-.3	-.3	-.3	-.3	-.2	-.3	-.4	-.4	-.3	-.3	-.2	-.2	-.2	-.2	-.2	-.3	-.4	-.4	-.3	-.3	-.3	-.3	-.2	-.1	-.1
-.4	-.4	-.3	-.4	-.5	-.6	-.7	-.7	-.7	-.6	-.5	-.5	-.5	-.6	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.5	-.6	-.5	-.5	-.6	-.7	-.6	-.6	-.6	-.6	-.6	-.5	-.4	-.4
-.7	-.7	-.6	-.7	-.7	-.8	-.9	-.9	-.8	-.7	-.6	-.7	-.7	-.7	-.7	-.7	-.7	-.8	-.7	-.8	-.9	-1.0	-1.0	-1.0	-1.0	-.9	-1.0	-1.0	-1.0	-.9	-.9	-.9	-.8	-.8	-.7	-.7
-.9	-.8	-.9	-.9	-1.0	-1.0	-1.0	-.9	-.8	-.8	-.8	-.8	-.9	-.9	-.9	-.9	-1.0	-1.0	-1.0	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.0	-1.0	-.9	-.8	-.9	-.8	-.8
-1.0	-1.0	-1.0	-1.1	-1.1	-1.1	-1.1	-1.1	-1.0	-1.0	-.9	-1.0	-1.0	-1.0	-1.1	-1.0	-1.1	-1.0	-1.0	-1.1	-1.1	-1.1	-1.0	-1.0	-1.1	-1.1	-1.2	-1.1	-1.1	-1.1	-1.0	-1.0	-.9	-1.0	-1.0	-.9
-1.0	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-.9	-1.0	-1.0	-1.0	-1.1	-1.1	-1.1	-1.1	-1.1	-1.2	-1.2	-1.1	-1.1	-1.1	-1.0	-1.1	-1.0	-1.0	-1.0	-1.0	-1.1	-1.0	-1.0	-1.0	-1.1	-1.0
-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.1	-1.0	-.9	-1.0	-1.0	-1.0	-1.0	-1.0	-1.1	-1.3	-1.3	-1.2	-1.2	-1.1	-1.1	-1.0	-1.0	-.9	-1.0	-1.0	-1.0	-1.1	-1.1	-1.0	-1.0	-1.1	-1.0
-1.0	-1.0	-1.0	-1.0	-.9	-1.0	-1.0	-1.0	-1.0	-1.1	-1.1	-1.1	-1.1	-1.1	-1.0	-.9	-.8	-.7	-.9	-.9	-.9	-.9	-.9	-1.0	-1.0	-1.0	-1.0	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.0
-.7	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.9	-.9	-.9	-.9	-.9	-.9	-.9	-.8	-.7	-.7	-.8	-.8	-.7	-.8	-.8	-.8	-.9	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-.9	-.9
-.5	-.5	-.6	-.6	-.6	-.6	-.5	-.5	-.5	-.6	-.6	-.7	-.7	-.7	-.7	-.6	-.6	-.6	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.7	-.6
-.5	-.5	-.6	-.6	-.5	-.5	-.5	-.4	-.4	-.4	-.4	-.5	-.5	-.6	-.6	-.5	-.6	-.7	-.7	-.6	-.6	-.7	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6	-.6
-.8	-.8	-.8	-.8	-.8	-.8	-.7	-.7	-.7	-.7	-.8	-.8	-.9	-.9	-.9	-.8	-.9	-.9	-.8	-.8	-.9	-.9	-.9	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.9	-.9	-.8	-.8	-.8
-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.2	-1.2	-1.2	-1.2	-1.3	-1.2	-1.2	-1.2	-1.2	-1.2	-1.3	-1.3	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.3	-1.3	-1.2	-1.2	-1.2	-1.2	-1.1
-1.4	-1.4	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.4	-1.4	-1.5	-1.5	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.5	-1.5	-1.5	-1.5	-1.5	-1.4	-1.4	-1.4	-1.4	-1.4
-1.2	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.4	-1.4	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.4	-1.4	-1.4	-1.4	-1.4	-1.5	-1.4	-1.4	-1.4	-1.4	-1.4	-1.3	-1.3	-1.3	-1.3

Figure 69. ATOVS SD O-B brightness temperature differences (deg C). JULY 2006
Channel: AMSUA-9 (100 hPa)
NOAA18, using all observations



150°W
120°W
90°W
60°W
30°W
0°
30°E
60°E
90°E
120°E
150°E
60°N
30°N
0°
30°S
60°S

TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)
DATA TYPE:- DRIFTER
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for drifting buoy.
Area monitored		:10°N - 80°N, 85°W - 0°W
Standard of comparison		:Background field from UKMO global model.
Position		:Average latitude and longitude for period.
Observation times		:All hours combined.
Elements monitored		:Mean sea-level pressure (hPa) :Wind speed (m s^{-1}) :Wind direction (degrees)
Parameters monitored	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors. **N.B. A positive bias indicates the wind observation is veered to the background**
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors
GROSS ERROR LIMITS	:15 hPa (pressure) :25 m s^{-1} (Vector Wind)	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 m s^{-1}

IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
13534	27.4	-56.9	P	765	0	4	0.3	-0.2	0.4
41520	32.0	-74.3	P	267	0	52	0.7	0.9	1.2
41524	38.0	-62.1	P	17	0	35	0.6	0.7	0.9
41525	28.6	-67.9	P	755	0	9	0.4	-0.1	0.4
41535	18.6	-54.3	P	1282	0	46	0.4	-0.7	0.8
41536	13.7	-61.0	P	373	0	53	0.9	0.8	1.1
41625	24.8	-64.8	P	707	0	7	0.6	0.9	1.1
41626	38.6	-69.8	P	12	0	42	0.3	0.6	0.7
41627	38.5	-65.9	P	11	0	45	0.6	0.6	0.8
41628	37.4	-71.1	P	10	0	30	0.5	0.9	1.0
41629	35.3	-72.2	P	32	0	53	0.6	0.6	0.9
41630	31.7	-76.8	P	736	0	8	0.5	0.3	0.6
41641	30.2	-77.9	P	37	0	57	0.7	0.8	1.0
41643	38.1	-50.5	P	764	0	11	0.4	0.3	0.5
41645	33.1	-71.5	P	1150	0	42	0.5	1.1	1.2
41646	30.3	-66.6	P	687	0	7	0.4	0.4	0.6
41651	28.7	-78.6	P	24	0	46	0.5	1.1	1.2
41652	32.8	-77.9	P	10	0	20	0.6	0.6	0.8
41654	11.6	-58.9	P	143	0	49	1.1	1.1	1.5
41656	15.7	-50.9	P	84	0	0	0.4	-0.3	0.5
41657	14.7	-55.5	P	88	0	0	0.4	0.0	0.4
41658	17.6	-65.2	P	86	0	0	0.3	0.4	0.5
44607	29.9	-32.1	P	777	1	7	0.2	-0.2	0.3
44609	44.0	-11.4	P	616	0	5	0.6	0.2	0.6
44611	60.7	-9.3	P	752	0	4	0.4	-0.7	0.8
44613	43.2	-42.7	P	732	0	0	0.4	0.7	0.8
44614	45.7	-38.7	P	707	0	0	0.5	0.3	0.6
44615	42.3	-19.8	P	734	0	3	0.3	-1.1	1.2
44617	48.9	-36.8	P	728	0	0	0.4	0.6	0.7
44620	44.0	-51.3	P	735	0	0	0.5	0.8	1.0
44637	40.6	-56.8	P	42	0	17	1.3	1.9	2.3
44722	49.6	-13.3	P	625	0	2	0.4	-0.3	0.5
44723	63.2	-36.8	P	776	0	5	0.6	-0.4	0.8
44725	55.4	-36.2	P	760	0	4	0.5	0.5	0.7
44728	55.9	-23.2	P	760	0	5	0.7	-0.1	0.7
44729	43.6	-62.7	P	738	0	1	0.5	-0.6	0.8
44730	65.2	-26.7	P	95	0	0	0.4	-0.6	0.8
44742	54.2	-43.7	P	762	0	4	0.5	-0.2	0.5
44745	30.6	-28.2	P	761	0	10	0.3	0.2	0.3
44747	37.2	-27.0	P	773	0	5	0.3	-0.1	0.3
44760	52.6	-48.3	P	676	1	4	0.5	0.1	0.5
44761	49.0	-22.3	P	661	0	5	0.4	-0.1	0.4
44762	53.4	-37.3	P	759	0	3	0.4	-0.1	0.4
44763	54.8	-42.6	P	761	0	4	0.4	-0.1	0.5
44764	50.2	-36.9	P	758	0	4	0.5	-0.3	0.5
44765	45.8	-33.3	P	736	0	2	0.4	0.1	0.4
44766	44.5	-38.6	P	751	0	3	0.4	0.0	0.4
44767	45.0	-41.8	P	734	0	3	0.4	0.0	0.4
44768	61.7	-41.5	P	772	0	5	0.7	-0.4	0.8
44769	45.9	-51.5	P	749	0	2	0.5	0.2	0.5
44770	55.3	-36.1	P	756	0	4	0.5	-0.3	0.5
44771	50.8	-46.7	P	758	0	3	0.6	-0.2	0.6
44772	45.2	-42.2	P	755	0	3	0.4	0.3	0.5
44773	39.6	-40.0	P	755	0	3	0.3	0.2	0.4
44774	40.9	-51.2	P	755	0	3	0.5	0.3	0.6
44776	57.7	-34.0	P	746	0	2	0.6	-0.1	0.6
44777	50.7	-21.7	P	743	0	4	0.4	-0.4	0.6
44778	51.4	-40.9	P	758	0	4	0.5	-0.3	0.6
44779	49.9	-22.6	P	727	0	0	0.4	-0.1	0.4
44780	51.7	-33.1	P	732	0	0	0.4	-0.1	0.4

IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
44845	48.1	-16.4	P	1038	0	31	0.5	-0.2	0.5
44846	47.1	-10.4	P	820	0	13	0.4	0.0	0.4
44847	33.7	-26.3	P	806	0	11	0.2	-0.2	0.3
44848	32.6	-37.6	P	831	0	13	0.3	0.1	0.3
44850	38.1	-20.9	P	1040	0	31	0.3	0.0	0.3
44901	33.1	-33.1	P	1024	0	30	0.3	0.0	0.3
44903	47.3	-20.6	P	850	0	15	0.4	0.1	0.4
44913	40.7	-36.6	P	846	0	15	0.3	-0.3	0.4
44914	40.8	-44.5	P	1122	0	37	0.4	0.0	0.4
44918	36.0	-59.1	P	533	0	12	0.4	0.2	0.4
44919	40.8	-50.6	P	565	0	16	0.4	0.3	0.5
44920	42.7	-45.2	P	555	0	15	0.4	0.1	0.4
44921	43.6	-36.5	P	556	0	15	0.4	-0.2	0.4
47555	71.8	-72.2	P	2247	0	76	0.6	-0.5	0.8
62507	44.1	-3.5	P	734	0	4	0.5	-0.8	0.9
62510	23.3	-31.0	P	1077	0	34	0.3	0.0	0.3
62515	44.1	-8.2	P	762	0	5	0.4	-0.3	0.5
62556	27.8	-59.2	P	760	0	3	0.3	0.3	0.4
62560	42.3	-29.1	P	715	0	3	0.4	0.0	0.4
62564	34.0	-23.1	P	769	0	4	0.3	0.1	0.3
62567	34.7	-17.4	P	739	0	4	0.3	-0.5	0.6
62569	62.6	-31.2	P	758	0	3	0.5	0.6	0.8
62571	45.2	-4.5	P	604	0	3	0.5	0.2	0.5
62572	28.5	-15.5	P	819	0	11	0.5	-0.2	0.6
62573	39.0	-30.2	P	1166	0	39	0.3	0.1	0.3
62574	51.7	-21.5	P	720	0	0	0.4	0.0	0.4
62575	47.7	-26.0	P	721	0	0	0.4	-0.1	0.4
62934	43.7	-9.6	P	851	0	17	0.4	0.1	0.4
62935	41.9	-20.6	P	804	0	12	0.5	-0.1	0.5
63529	67.8	-25.5	P	2389	0	83	0.8	-0.5	1.0
64614	64.3	-26.5	P	756	0	3	0.4	-0.2	0.5
64615	63.7	-39.0	P	765	0	4	0.6	-0.8	1.0
64616	61.5	-30.8	P	759	0	4	0.5	-0.5	0.7
64617	60.7	-33.8	P	756	0	4	0.5	-0.1	0.5
9350317	46.4	-47.1	P	21	0	5	1.7	0.3	1.7

IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
41525	28.6	-67.9	SPEED	746	0	100	1.3	-2.4	2.7
41630	31.7	-76.8	SPEED	708	0	100	2.5	-1.4	2.9
41643	38.1	-50.5	SPEED	750	0	100	1.5	-1.4	2.0
41645	33.1	-71.5	SPEED	1142	0	100	2.4	-0.3	2.4
41646	30.3	-66.6	SPEED	681	0	100	1.8	-1.8	2.6
41656	15.7	-50.9	SPEED	83	0	100	1.3	0.7	1.5
41657	14.7	-55.5	SPEED	88	0	100	2.2	1.5	2.7
41658	17.6	-65.2	SPEED	75	0	100	3.3	2.5	4.2
62571	45.2	-4.5	SPEED	453	0	100	1.9	0.1	1.9
9350317	46.4	-47.1	SPEED	21	0	100	2.7	2.5	3.7

IDENTIFIER	LAT.	LONG.	ELEM	NOBS	PGE	%REJ	SD	BIAS	RMS
41525	28.6	-67.9	DIRN.	68	0	0	12.3	-3.9	12.9
41630	31.7	-76.8	DIRN.	212	0	0	19.1	27.7	33.6
41643	38.1	-50.5	DIRN.	444	0	0	13.5	35.3	37.8
41645	33.1	-71.5	DIRN.	824	0	0	20.5	21.8	30.0
41646	30.3	-66.6	DIRN.	70	0	0	10.3	9.1	13.7
41656	15.7	-50.9	DIRN.	81	0	0	17.2	14.3	22.4
41657	14.7	-55.5	DIRN.	88	0	0	16.0	17.9	24.0
41658	17.6	-65.2	DIRN.	75	0	0	7.9	5.9	9.9
62571	45.2	-4.5	DIRN.	210	0	0	22.0	5.2	22.6
9350317	46.4	-47.1	DIRN.	13	0	0	24.3	4.4	24.7

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures:

Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :40°N - 70°N, 60°W - 0°W.

Standard of comparison :Background field from UKMO global model.

Observation times :All hours combined.

Level(s) monitored :300.0 - 150.0 hPa

Elements monitored :TEMP in °C ; WIND in m s^{-1}

Parameters monitored :N REP. :Number of observations received excluding duplicates.

:PG :Percentage of observations with gross errors.

:PR :Percentage of observations rejected by quality control including rejections from the duplicate check.

:PC :Percentage of observations with calm winds.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.

:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.

GROSS ERROR LIMITS :10.0 °C ; 60 m s^{-1} Vector Wind

SELECTION CRITERIA :N REP ≥ 20

NB : All American ACARS data are grouped together and statistics are shown at the bottom of the table as "US ACARS". All ADS reports are similarly grouped together.

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAL	5136	0	6	1.4	0.1	4798	0	6	0	4.5	0.7
ACA	2212	0	5	1.6	-0.3	1636	0	3	0	4.7	0.5
ACF	50	6	46	3.5	0.5	29	0	55	0	24.1	-3.3
AEA	399	1	3	1.7	0.7	346	0	3	0	6.7	0.0
AFL	435	2	6	1.8	0.3	221	0	8	0	10.5	0.2
AFR	5012	0	3	1.5	0.1	4874	0	2	0	4.7	0.4
AFZ	162	0	4	2.1	1.7	162	0	4	0	4.9	0.4
AJM	175	0	13	1.9	-0.4	112	0	20	0	14.0	1.2
AMT	72	0	7	1.8	0.2	62	2	3	0	4.8	0.7
AMX	369	1	6	1.5	0.1	289	0	4	0	6.7	0.1
ANZ	180	0	41	1.4	0.1	166	0	41	0	4.3	0.4
ATN	46	2	100	5.3	-4.7	28	0	4	0	10.3	-0.5
AUA	721	0	2	1.6	0.8	692	0	1	0	4.4	0.4
AVA	78	1	3	1.2	-0.3	78	0	4	0	7.4	0.2
AZA	355	0	7	1.9	0.8	255	0	5	0	8.6	0.2
BAW	650	0	27	2.0	-0.7	441	0	26	0	7.1	-0.2
BMA	374	0	2	1.4	-0.3	352	0	2	0	3.8	0.9
BPA	207	0	19	1.7	0.2	192	0	19	0	10.9	0.3
BWA	117	1	3	1.8	-0.2	86	0	1	0	4.1	0.5
CFC	31	0	10	2.5	0.9	26	0	15	0	15.8	2.7
CFG	441	1	10	1.7	-0.1	305	0	14	0	12.7	0.3
CFY	73	0	1	1.1	-0.2	64	0	2	0	3.3	0.3
CGF	560	0	3	1.5	-0.2	491	0	2	0	3.4	0.6
CGH	498	0	2	1.4	-0.1	454	0	1	0	3.5	0.5
CKS	57	0	16	2.6	0.4	22	0	27	0	12.8	2.2
CLX	243	1	6	2.0	-0.7	118	0	9	0	10.6	-0.2
CNJ	39	0	59	1.3	0.8	39	0	59	0	7.7	-1.4
COA	5119	0	10	1.4	-0.1	4844	0	8	0	4.8	0.5
CRG	29	3	10	1.9	-0.2	30	0	47	0	17.9	4.6
CRL	327	0	5	1.8	0.0	294	1	5	0	7.5	0.4
CUB	168	1	10	2.0	-0.1	110	0	100	0	11.6	-0.1
DAB	1047	0	4	1.5	-0.3	973	0	4	0	4.0	0.4
DAI	1094	0	8	1.3	0.1	1027	0	8	0	3.7	0.6
DAL	1923	0	6	1.5	0.1	1532	0	3	0	4.5	0.8
DLH	6099	0	5	1.4	0.0	5890	0	4	0	4.4	0.4
DRD	137	1	5	1.9	-0.2	135	0	3	0	6.4	0.5
EDW	29	0	7	2.3	0.1	22	0	9	0	14.0	1.1
EEZ	142	2	5	1.6	0.1	94	1	6	0	8.5	1.0
EIA	175	1	13	2.0	-0.6	152	0	100	0	24.0	9.7
ELY	495	0	3	1.4	0.3	448	0	3	0	6.0	0.6
ETH	68	1	9	1.5	0.3	24	0	4	0	7.7	2.1
FCA	120	2	13	1.5	0.0	70	0	11	0	10.8	1.3
FDX	180	0	34	1.9	0.2	84	0	33	0	4.9	0.2
FGE	47	0	4	1.5	-0.7	43	0	5	0	4.3	1.0
FGI	381	0	4	1.5	-0.4	358	0	4	0	4.2	0.5
FGL	107	0	4	1.2	-0.1	102	0	4	0	4.1	0.7
FGN	36	0	8	1.6	0.3	35	0	6	0	4.7	1.3
FGS	449	0	5	1.5	0.2	421	0	5	0	3.9	0.9
FGZ	124	0	4	1.3	-0.1	120	0	4	0	3.5	0.8
FIN	412	0	3	1.5	0.1	327	0	4	0	7.1	0.1
FOJ	57	0	2	1.6	-0.7	49	0	2	0	4.0	0.5
FOS	44	0	7	1.8	-1.2	42	0	7	0	4.9	1.4
FWI	251	0	17	1.7	-0.5	233	0	15	0	8.7	0.5
GCO	101	2	11	1.8	-0.5	82	0	21	0	16.3	-1.2
GEC	413	0	22	1.7	-0.2	387	0	22	0	11.6	0.9
GOJ	223	0	3	1.3	0.1	201	0	3	0	3.5	0.6
GRL	128	1	1	1.4	0.1	124	0	2	0	5.0	0.5
GSM	43	5	9	2.2	-0.7	22	0	14	0	9.0	0.2
GTI	153	1	10	1.8	0.2	111	0	5	0	8.2	0.3

		TEMPERATURE					WIND				
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
GVA	62	0	5	1.5	0.2	58	0	5	0	4.3	0.5
GVB	94	0	3	1.5	-0.2	90	0	2	0	4.3	0.4
GVF	111	0	1	1.8	-0.7	107	0	1	0	4.5	0.6
GVG	43	0	2	1.6	-0.7	39	0	3	0	4.1	0.7
GVH	70	0	3	1.5	-0.6	65	0	3	0	4.0	0.0
GVL	59	0	0	1.3	0.0	57	0	0	0	4.2	0.6
GVR	227	0	4	1.5	-0.2	217	0	4	0	4.5	0.8
GVS	23	0	9	1.2	0.2	20	0	10	0	5.0	0.2
GVT	47	0	9	1.6	-0.4	44	0	7	0	4.0	1.3
GVW	88	0	1	1.6	-0.5	85	0	1	0	4.0	0.4
GVX	37	0	5	1.6	-0.2	37	0	5	0	4.8	-0.1
GWW	159	0	4	1.5	-0.2	149	0	3	0	3.1	0.3
HBI	205	0	5	1.5	-0.4	192	0	4	0	3.9	0.9
HBJ	122	0	2	1.7	-0.9	110	0	2	0	4.0	0.6
IBE	1756	0	5	1.5	-0.1	1696	0	5	0	8.5	0.4
ICE	1158	0	3	1.7	-0.2	717	0	2	0	6.0	0.7
ILI	23	0	0	1.1	0.2	20	0	0	0	3.0	0.8
IWD	367	0	4	1.2	0.0	364	0	6	0	6.3	0.4
KAC	114	0	1	1.4	0.6	113	0	0	0	3.8	0.6
KLM	1035	0	6	1.7	0.1	786	0	9	0	9.6	0.3
LNR	292	0	48	1.3	-0.1	270	0	49	0	3.6	0.2
LOT	579	1	3	1.8	-0.8	376	0	4	0	8.0	-0.2
LTU	615	0	4	1.3	-0.3	563	0	3	0	4.9	0.7
LUZ	48	0	4	1.3	0.6	37	0	11	0	10.0	0.9
LVG	158	1	9	1.4	0.2	149	0	8	0	5.9	0.5
MAS	93	1	4	1.5	0.2	84	0	4	0	4.7	0.7
MMZ	47	0	6	2.2	0.6	46	0	4	0	8.9	-0.1
MON	71	3	7	1.5	-0.3	41	2	20	0	12.1	1.9
MPD	340	1	3	1.7	0.0	315	0	2	0	6.6	0.1
MPH	149	0	8	2.0	-0.8	89	0	13	0	12.4	0.5
MSR	198	0	2	1.3	0.3	192	0	2	0	4.1	0.7
MXJ	310	2	12	1.9	-0.4	154	0	5	0	4.6	0.5
MYT	245	0	7	1.9	-0.4	179	0	6	0	7.8	-0.1
NAO	92	0	2	1.5	-0.4	76	1	3	0	5.1	0.3
NOS	167	2	10	1.9	0.3	99	0	10	0	10.4	1.3
NWA	2568	0	6	1.8	-0.1	2325	0	4	0	5.7	0.5
OAE	241	1	11	1.7	-0.3	90	1	24	0	11.9	4.0
OEL	115	0	3	1.6	0.8	104	0	4	0	4.1	0.6
OOM	162	1	4	1.7	-0.3	128	0	3	0	5.1	0.7
OYK	589	0	52	1.4	-0.2	548	0	52	0	3.5	0.5
PAC	65	0	12	1.9	-0.5	27	0	19	0	13.6	-0.4
PHB	30	0	10	1.3	0.1	28	0	11	0	4.3	2.2
PLM	217	0	3	1.8	1.3	200	0	5	0	8.2	-0.4
RAM	488	1	2	1.4	-0.1	333	0	4	0	7.7	0.4
RCH	249	2	100	2.8	-0.7	177	0	100	0	9.8	1.3
RJA	39	0	5	1.3	-0.4	24	0	0	0	4.8	1.3
RRR	55	2	11	2.4	0.0	52	0	6	0	10.1	-0.2
RZO	419	0	3	1.4	-0.7	358	0	3	0	6.7	0.6
SAS	1100	0	60	1.5	-0.1	1032	0	60	0	4.1	0.7
SER	459	0	49	1.5	-0.1	421	0	50	0	3.6	0.6
SEU	93	1	22	2.7	0.1	66	0	23	0	15.2	0.9
SIA	287	0	2	1.6	0.1	279	0	0	0	4.5	0.4
SLM	26	0	0	0.7	0.0	26	0	0	0	4.9	0.4
SQC	256	0	0	1.4	-0.3	247	0	0	0	4.7	-0.3
SSV	53	2	4	0.9	0.5	48	0	4	0	7.0	-0.4
SUG	34	0	0	1.5	0.1	33	0	0	0	4.9	0.6
SWR	1837	0	4	1.4	-0.5	1787	0	4	0	4.1	0.6
TAP	494	0	3	1.4	-0.3	395	0	2	0	6.1	0.6
TCX	287	0	3	1.1	-0.2	252	0	3	0	4.5	0.7

		TEMPERATURE						WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
TFL	123	1	13	1.6	-0.2	72	0	63	0	11.2	0.7
THT	165	0	3	1.6	-0.6	150	0	1	0	4.0	0.7
TOM	245	1	8	1.5	-0.1	230	0	6	0	8.2	0.8
TSC	609	1	5	1.7	-0.6	377	0	4	0	6.1	0.3
TSO	35	0	6	1.4	-0.3	20	0	20	0	17.1	-6.2
TUB	57	0	9	1.3	0.1	27	0	22	0	13.3	1.0
UAE	395	0	2	1.4	0.1	369	0	2	0	4.7	0.8
UAL	3657	0	5	1.4	-0.2	3498	0	4	0	4.4	0.5
UPS	951	0	52	1.8	-0.4	472	0	52	0	6.9	0.2
USA	2037	0	3	1.3	-0.1	1946	0	3	0	4.3	0.5
VIR	2550	0	3	1.3	-0.2	2436	0	3	0	4.5	0.2
VLE	54	2	13	2.8	-1.5	46	0	11	0	9.2	0.7
WHT	39	0	0	1.0	-0.2	34	0	3	0	9.5	0.1
WOA	85	1	7	1.7	0.0	66	0	3	0	4.9	0.1
XLA	54	7	19	2.9	0.0	42	0	12	0	15.2	-1.2
ZKN	122	0	3	1.4	0.0	114	0	3	0	4.3	0.6
ZKS	48	0	0	1.6	-0.5	44	0	0	0	4.4	1.1
4XE	86	0	3	1.7	-0.1	81	0	4	0	3.8	1.1
9MM	56	0	2	1.6	0.5	53	0	2	0	3.3	0.4
9VS	77	0	3	1.3	-0.2	70	0	3	0	4.3	0.1

		TEMPERATURE						WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
EU	46117	0	22	1.3	0.1	46117	0	21	0	4.2	0.3

		TEMPERATURE						WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
A	226	0	2	1.5	-0.1	212	0	1	0	4.4	0.7
N	6616	0	13	1.5	-0.2	6052	0	13	0	4.2	0.5
S	25	0	0	1.0	-0.1	24	0	0	0	4.1	0.7

		TEMPERATURE						WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
	43748	0	34	1.3	0.2	43748	0	29	0	4.7	0.0

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from selected radiosonde TEMPs.

Area monitored :0°N - 90°N, 100°W - 40°E

Standard of comparison :Background field from UKMO global model.

Position :Average latitude and longitude for period.

Observation times :00, 12 UTC.

Level monitored :100 hPa.

Element monitored :GEOPOTENTIAL HEIGHT in metres

Parameters monitored

:NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:SD :SD of difference of observations from background values at level shown excluding those with gross errors.

:BIAS :Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
ASDE01	00	Z	100	3	0	31.8	38.7	22.0
ASDE01	12	Z	100	4	1	11.1	11.6	-3.3
ASDE02	00	Z	100	8	0	8.5	10.3	-5.9
ASDE02	12	Z	100	7	0	9.5	10.4	-4.4
ASDE03	00	Z	100	11	0	7.3	19.9	18.5
ASDE03	12	Z	100	11	0	7.0	14.7	12.9
ASDE04	00	Z	100	13	0	10.2	10.6	2.8
ASDE04	12	Z	100	12	0	11.7	14.2	-8.2
ASEU01	00	Z	100	5	0	15.9	18.7	-9.8
ASEU01	12	Z	100	4	0	7.0	8.0	-4.0
ASEU02	00	Z	100	7	0	8.5	10.7	-6.4
ASEU02	12	Z	100	6	0	13.2	13.4	-2.5
ASEU03	00	Z	100	7	0	37.1	37.3	-3.7
ASEU03	12	Z	100	5	0	10.9	11.0	1.8
ASEU04	00	Z	100	3	0	10.8	28.5	26.3
ASEU04	12	Z	100	5	0	9.2	23.5	21.6
ASEU05	00	Z	100	10	0	7.0	16.0	14.4
ASEU05	12	Z	100	9	0	6.4	7.0	2.8
ASUK01	00	Z	100	6	0	7.9	21.5	20.0
ASUK01	12	Z	100	6	0	6.0	19.6	18.7
EBUQ	12	Z	100	15	0	10.7	11.6	-4.7
FQFL	00	Z	100	9	0	8.3	20.0	-18.2
FQFL	12	Z	100	8	0	11.0	23.7	-21.0
FQFM	00	Z	100	9	0	8.4	11.6	8.0
FQFM	12	Z	100	7	0	12.3	14.1	6.9
LDWR	00	Z	100	29	0	7.7	7.7	-0.2
LDWR	12	Z	100	29	0	16.5	16.5	0.2
OXGN2	00	Z	100	7	0	12.0	12.3	-2.9
OXGN2	12	Z	100	9	0	12.7	12.9	2.4
OXVH2	00	Z	100	7	0	15.2	15.5	2.9
OXVH2	12	Z	100	10	0	29.8	29.8	2.0
V2XM	00	Z	100	6	0	9.7	26.5	24.7
V2XM	12	Z	100	5	0	10.9	34.6	32.8
WTEC	00	Z	100	1	0	0.0	5.0	5.0
WTEC	12	Z	100	7	0	7.1	15.3	13.6
03953	00	Z	100	29	0	5.8	8.7	-6.6
03953	12	Z	100	31	0	7.2	12.9	-10.7
04018	00	Z	100	29	0	6.8	6.8	0.1
04018	12	Z	100	29	0	10.5	10.6	1.2
04220	00	Z	100	28	0	14.2	16.1	7.6
04220	12	Z	100	31	0	14.1	17.2	9.8
04270	00	Z	100	28	0	8.7	9.1	-2.8
04270	12	Z	100	30	0	8.6	8.7	-1.0
04339	00	Z	100	27	0	10.0	10.1	0.9
04339	12	Z	100	30	0	11.5	11.5	-0.2
04360	00	Z	100	29	0	11.8	16.2	11.1
04360	12	Z	100	30	0	10.5	15.5	11.4
08001	00	Z	100	25	0	7.3	7.3	-0.5
08001	12	Z	100	27	0	9.2	9.4	-1.7
08508	12	Z	100	30	0	14.7	17.7	-9.7
08522	12	Z	100	27	0	6.6	21.5	-20.4
08594	12	Z	100	17	1	11.1	21.9	-18.9
71600	00	Z	100	29	0	10.5	14.9	-10.6
71600	12	Z	100	31	0	8.5	9.1	-3.0
72201	00	Z	100	29	0	10.7	11.3	3.6
72201	12	Z	100	31	0	11.2	16.1	11.5
72402	00	Z	100	29	0	12.9	21.7	17.5
72402	12	Z	100	31	0	13.6	13.9	2.8
74494	00	Z	100	26	0	14.0	15.8	-7.3

74494	12	Z	100	29	0	10.8	20.5	-17.4
78016	00	Z	100	24	0	9.9	10.1	1.9
78016	12	Z	100	31	0	9.8	10.3	3.3

TABLE 11

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Reports from selected radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from UKMO global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
ASDE01	00	Z	500	3	0	20.5	28.6	20.0
ASDE01	12	Z	500	4	1	8.0	8.5	-3.0
ASDE02	00	Z	500	8	0	3.3	3.8	-1.8
ASDE02	12	Z	500	7	0	4.6	5.0	2.0
ASDE03	00	Z	500	12	0	3.0	15.9	15.7
ASDE03	12	Z	500	12	0	5.5	15.1	14.1
ASDE04	00	Z	500	13	0	11.1	11.2	1.1
ASDE04	12	Z	500	13	0	7.4	9.6	-6.1
ASEU01	00	Z	500	5	0	3.7	8.5	-7.6
ASEU01	12	Z	500	4	0	6.5	13.0	-11.3
ASEU02	00	Z	500	8	0	6.1	9.0	-6.6
ASEU02	12	Z	500	7	0	4.1	13.5	-12.9
ASEU03	00	Z	500	7	0	36.4	37.3	-8.3
ASEU03	12	Z	500	6	0	5.8	6.0	-1.7
ASEU04	00	Z	500	4	0	2.9	19.0	18.8
ASEU04	12	Z	500	6	0	2.6	15.9	15.7
ASEU05	00	Z	500	10	0	6.2	12.5	10.9
ASEU05	12	Z	500	9	0	5.8	8.1	5.7
ASUK01	00	Z	500	7	0	7.1	20.6	19.3
ASUK01	12	Z	500	7	0	9.4	25.8	24.0
DLACH	12	Z	500	2	0	0.5	21.5	21.5
EBUQ	12	Z	500	15	0	6.6	6.9	-2.0
FQFL	00	Z	500	11	0	5.5	17.3	-16.4
FQFL	12	Z	500	10	0	4.9	15.5	-14.7
FQFM	00	Z	500	9	0	5.4	6.0	-2.6
FQFM	12	Z	500	7	0	7.6	7.6	0.4
HVDAN	12	Z	500	5	0	6.3	11.7	9.8
LDWR	00	Z	500	29	0	5.0	5.0	0.3
LDWR	12	Z	500	31	0	16.4	16.4	1.5
OXGN2	00	Z	500	7	0	13.5	13.6	-1.9
OXGN2	12	Z	500	9	0	9.4	10.8	-5.2
OXVH2	00	Z	500	8	0	23.7	25.8	-10.1
OXVH2	12	Z	500	10	0	27.3	28.1	-6.7
V2XM	00	Z	500	6	0	5.5	19.1	18.3
V2XM	12	Z	500	6	0	8.5	22.2	20.5
WTEC	00	Z	500	2	0	0.0	7.0	7.0
WTEC	12	Z	500	7	0	6.1	10.9	9.0
03953	00	Z	500	29	0	4.4	4.8	-1.9
03953	12	Z	500	31	0	5.5	9.2	-7.5
04018	00	Z	500	29	0	8.7	9.2	2.9
04018	12	Z	500	29	0	10.0	10.1	-1.3
04220	00	Z	500	28	0	8.8	9.2	2.7
04220	12	Z	500	31	0	8.8	9.4	3.5
04270	00	Z	500	28	0	7.7	7.8	-1.3
04270	12	Z	500	30	0	6.8	7.4	-2.8
04339	00	Z	500	28	0	6.2	6.3	-0.1
04339	12	Z	500	31	0	5.2	5.2	-0.3
04360	00	Z	500	29	0	7.1	7.2	1.4
04360	12	Z	500	30	0	8.6	8.6	0.9
08001	00	Z	500	26	0	6.1	6.9	-3.2
08001	12	Z	500	29	0	5.6	7.6	-5.1
08508	12	Z	500	30	0	8.2	12.1	-9.0
08522	12	Z	500	27	0	5.6	13.7	-12.5
08594	12	Z	500	20	0	5.4	12.7	-11.5
71600	00	Z	500	29	0	6.6	7.6	-3.7
71600	12	Z	500	31	0	6.9	7.0	0.8
72201	00	Z	500	29	0	6.2	6.6	-2.2
72201	12	Z	500	31	0	7.8	7.9	-1.4
72402	00	Z	500	29	0	5.6	5.6	-0.3
72402	12	Z	500	31	0	9.4	9.6	2.2

74494	00	Z	500	27	0	6.0	9.5	-7.4
74494	12	Z	500	30	0	4.6	5.0	-2.2
78016	00	Z	500	28	0	8.9	9.6	3.6
78016	12	Z	500	31	0	6.1	9.2	6.8

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures		
Period		:One calendar month.
Data monitored		:Reports from selected radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from UKMO global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
ASDE01	00	V	100	3	0	0	3.9	-2.2	0.9
ASDE01	12	V	100	5	0	0	2.7	-1.1	0.6
ASDE02	00	V	100	7	0	0	5.8	-0.6	-0.6
ASDE02	12	V	100	7	0	0	5.4	-1.9	0.7
ASDE03	00	V	100	10	0	0	4.0	1.4	-1.7
ASDE03	12	V	100	11	0	0	3.0	0.0	0.3
ASDE04	00	V	100	13	0	0	3.4	0.6	0.1
ASDE04	12	V	100	12	0	0	3.2	0.6	0.3
ASEU01	00	V	100	5	0	0	3.7	-1.4	-0.1
ASEU01	12	V	100	4	0	0	3.7	1.3	1.5
ASEU02	00	V	100	7	0	0	2.5	-0.9	0.5
ASEU02	12	V	100	6	0	0	3.0	0.9	1.5
ASEU03	00	V	100	6	0	0	2.9	0.4	-2.2
ASEU03	12	V	100	4	0	0	1.5	-0.8	0.3
ASEU04	00	V	100	1	0	0	10.1	-5.2	8.7
ASEU04	12	V	100	3	0	0	3.6	0.1	0.0
ASEU05	00	V	100	10	0	0	3.7	0.7	-0.3
ASEU05	12	V	100	9	0	0	2.9	0.4	0.3
ASUK01	00	V	100	4	0	0	2.2	-0.7	-0.1
ASUK01	12	V	100	4	0	0	3.8	1.2	-0.1
EBUQ	12	V	100	14	0	0	5.5	-0.6	1.0
FQFL	00	V	100	10	0	0	3.1	0.6	-0.2
FQFL	12	V	100	8	0	0	4.5	-0.7	0.0
FQFM	00	V	100	9	0	0	2.8	1.2	0.5
FQFM	12	V	100	7	0	0	3.4	0.6	0.7
LDWR	00	V	100	29	0	0	2.7	0.6	-0.1
LDWR	12	V	100	29	0	0	2.2	0.0	0.2
OXGN2	00	V	100	6	0	0	3.3	-0.7	-1.1
OXGN2	12	V	100	9	0	0	3.0	-0.6	0.7
OXVH2	00	V	100	4	0	25	9.0	-5.4	2.3
OXVH2	12	V	100	8	1	0	3.1	0.3	0.1
V2XM	00	V	100	6	0	0	2.3	-0.5	1.0
V2XM	12	V	100	5	0	0	2.4	-0.9	0.7
WTEC	00	V	100	1	0	0	0.2	0.1	0.2
WTEC	12	V	100	4	0	0	4.6	-2.6	-2.5
03953	00	V	100	29	0	0	2.8	0.2	0.7
03953	12	V	100	31	0	0	2.7	0.5	-0.2
04018	00	V	100	29	0	0	3.1	-1.0	0.4
04018	12	V	100	29	0	0	2.8	-0.7	-0.5
04220	00	V	100	28	0	0	2.5	0.0	-0.6
04220	12	V	100	30	0	0	2.7	0.2	-0.4
04270	00	V	100	28	0	0	2.6	-0.4	0.1
04270	12	V	100	30	0	0	3.0	-0.7	0.5
04339	00	V	100	27	0	0	2.2	0.0	0.3
04339	12	V	100	29	0	0	2.3	0.4	-0.4
04360	00	V	100	28	0	0	2.4	-0.2	0.0
04360	12	V	100	30	0	0	2.4	-0.2	0.4
08001	00	V	100	25	0	0	4.4	1.0	1.0
08001	12	V	100	27	0	0	3.1	-0.1	-0.9
08508	12	V	100	20	0	0	2.7	0.7	0.1
08522	12	V	100	27	0	0	4.6	0.7	-0.7
08594	12	V	100	18	0	100	4.8	0.3	2.6
71600	00	V	100	29	0	0	3.3	0.5	0.2
71600	12	V	100	31	0	0	2.9	-0.1	0.0
72201	00	V	100	29	0	0	2.9	0.4	-1.3
72201	12	V	100	31	0	0	2.3	0.1	0.5
72402	00	V	100	29	0	0	2.6	0.3	-0.4
72402	12	V	100	29	0	0	3.6	-1.5	0.6
74494	00	V	100	26	0	100	2.7	0.0	1.0

74494	12	V	100	29	0	100	2.4	-0.4	0.6
78016	00	V	100	24	0	0	3.4	-1.0	0.0
78016	12	V	100	31	0	0	2.9	0.1	-0.1

TABLE 13

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: EXETER
MONTH: Jul 06

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from selected radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from UKMO global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:UBIAS,VBIAS:	Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
ASDE01	00	V	500	3	0	0	2.0	-0.1	-0.9
ASDE01	12	V	500	5	0	0	2.4	1.1	-0.6
ASDE02	00	V	500	8	0	0	4.0	1.1	-0.8
ASDE02	12	V	500	7	0	0	3.8	0.2	-0.9
ASDE03	00	V	500	12	0	0	2.4	0.2	0.0
ASDE03	12	V	500	12	0	0	2.5	-0.4	0.2
ASDE04	00	V	500	13	0	0	3.0	0.2	0.2
ASDE04	12	V	500	12	0	0	2.8	-0.1	-0.7
ASEU01	00	V	500	5	0	0	3.7	-1.8	1.6
ASEU01	12	V	500	4	0	0	4.8	2.1	0.7
ASEU02	00	V	500	8	0	0	3.0	0.2	0.2
ASEU02	12	V	500	7	0	0	4.1	0.0	1.7
ASEU03	00	V	500	7	0	0	2.2	0.9	0.2
ASEU03	12	V	500	5	0	0	3.6	0.4	-0.1
ASEU04	00	V	500	1	0	0	3.8	-3.4	1.8
ASEU04	12	V	500	4	0	0	2.6	-0.8	0.0
ASEU05	00	V	500	10	0	0	3.6	-0.2	-0.4
ASEU05	12	V	500	9	0	0	2.6	0.8	0.8
ASUK01	00	V	500	5	0	0	3.0	0.3	-1.2
ASUK01	12	V	500	7	0	0	2.1	0.5	0.1
DLACH	12	V	500	2	0	0	1.9	0.1	-0.1
EBUQ	12	V	500	14	0	0	5.9	-0.7	0.5
FQFL	00	V	500	10	0	0	3.6	0.0	-0.3
FQFL	12	V	500	10	0	0	4.6	-0.4	-0.5
FQFM	00	V	500	9	0	0	2.7	-0.6	-0.1
FQFM	12	V	500	7	0	0	3.5	1.0	-1.4
HVDAN	12	V	500	5	0	0	3.7	2.0	0.2
LDWR	00	V	500	29	0	0	2.5	-0.2	0.3
LDWR	12	V	500	31	0	0	2.6	-0.1	0.1
OXGN2	00	V	500	7	0	0	3.4	-1.5	0.1
OXGN2	12	V	500	9	0	0	2.5	-0.1	-0.1
OXVH2	00	V	500	7	0	0	3.1	0.5	0.3
OXVH2	12	V	500	10	0	0	3.9	-0.3	0.1
V2XM	00	V	500	6	0	0	4.3	0.1	0.0
V2XM	12	V	500	5	0	0	4.2	-1.4	1.7
WTEC	00	V	500	2	0	0	1.1	-0.7	-0.2
WTEC	12	V	500	4	0	0	2.5	-0.5	-1.2
03953	00	V	500	29	0	0	3.4	-0.1	0.2
03953	12	V	500	31	0	0	3.2	0.6	0.3
04018	00	V	500	29	0	0	3.3	0.0	-0.8
04018	12	V	500	29	0	0	3.8	0.4	0.1
04220	00	V	500	28	0	0	3.3	0.6	0.0
04220	12	V	500	31	0	0	3.5	0.3	-0.7
04270	00	V	500	28	0	0	3.7	-0.1	0.1
04270	12	V	500	30	0	0	3.7	0.2	0.9
04339	00	V	500	28	0	0	2.8	0.0	0.1
04339	12	V	500	30	0	0	3.9	-0.6	0.7
04360	00	V	500	29	0	0	3.0	-0.5	-0.6
04360	12	V	500	30	0	0	3.8	0.6	-0.5
08001	00	V	500	26	0	0	4.4	0.2	0.8
08001	12	V	500	26	0	0	3.9	-0.2	-0.4
08508	12	V	500	20	0	0	2.6	0.3	0.2
08522	12	V	500	27	0	0	2.4	0.2	0.3
08594	12	V	500	21	0	0	4.4	0.8	3.1
71600	00	V	500	29	0	0	3.8	-0.1	0.4
71600	12	V	500	31	0	0	3.5	0.0	-0.4
72201	00	V	500	29	0	0	2.5	-0.6	-0.1
72201	12	V	500	31	0	0	2.9	-0.3	-0.2
72402	00	V	500	29	0	0	2.6	0.3	-0.2

72402	12	V	500	30	0	0	2.6	0.2	-0.4
74494	00	V	500	27	0	0	3.6	-1.4	0.5
74494	12	V	500	30	0	0	3.1	0.2	0.5
78016	00	V	500	28	0	0	3.3	-0.8	1.0
78016	12	V	500	31	0	0	2.7	0.4	-0.2

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5, 10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s^{-1}
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45